



STIC Search Report

EIC 1700

STIC Database Tracking Number: 140130

TO: Dawn Garrett
Location: REM 10A54
Art Unit : 1774
December 21, 2004

Case Serial Number: 10/670005

From: Usha Shrestha
Location: EIC 1700
REMSEN 4B28
Phone: 571/272-3519
usha.shrestha@uspto.gov

Search Notes



STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- I am an examiner in Workgroup: Example: 1713
➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28



SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: DAWN GARRETT Examiner #: 76107 Date: 12/10/2004
 Art Unit: 1774 Phone Number 272-1523 Serial Number: 10/670,005
 Mail Box and Bldg/Room Location: Remsen 10A54 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc. if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Organic Electroluminescent Device

Inventors (please provide full names): _____

Tatsuya Igarashi, Kohsuke Watanabe

Earliest Priority Filing Date: 2002-287390 Japan 9/30/02

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search formula (I) wherein:

R^H and R^{12} ~~are substituents~~ are substituents

Y^H , Y^{12} , and Y^{13} are substituted carbons

M^H is a transition metal

L^H is a ligand

$n^H = 1 \text{ to } 3$

$n^{12} = 0-4$

$n^{13} = 0-4$

STAFF USE ONLY

Searcher: Usha Shrestha

Searcher Phone #: _____

Searcher Location: _____

Date Searcher Picked-Up: 12/20/04

Date Completed: 12/21/04

Searcher Prep & Review Time: 30

Clerical Prep Time: _____

Online Time: 90

Type of Search

NA Sequence (#) _____

AA Sequence (#) _____

Structure (#) _____

Bibliographic _____

Litigation _____

Fulltext _____

Patent Family _____

Other _____

Vendors and cost where applicable

STN # 389.03

Dialog _____

Questel/Orbit _____

Dr. Link _____

Lexis/Nexis _____

Sequence Systems _____

WWW/Internet _____

Other (specify) _____

=> d his

FILE 'LREGISTRY' ENTERED AT 08:33:17 ON 21 DEC 2004

L1 STR
L2 STR L1

FILE 'REGISTRY' ENTERED AT 08:38:12 ON 21 DEC 2004

L3 SCR 1964
L4 SCR 1921
L5 SCR 1931
L6 50 S L1 AND (L3 OR L4 OR L5)
L7 34 S L2 AND (L3 OR L4 OR L5)
L8 STR L1
L9 50 S L8 AND (L3 OR L4 OR L5)
L10 STR L8
L11 50 S L10 AND (L3 OR L4 OR L5)
L12 39174 S L11 FUL
SAV L12 GAR670/A TEMP

FILE 'HCA' ENTERED AT 09:25:18 ON 21 DEC 2004

L13 33219 S L12
L14 170 S L13 (L) (EL OR ?LUMINE? OR LIGHT?(3A)EMIT?)
L15 8 S L13 (L) (EL OR ELCTROLUMINE? OR LIGHT?(3A)EMIT?)
L16 17 S L13 (L) (EL OR ELECTROLUMINE? OR LIGHT?(3A)EMIT?)
L17 1902 S IGARASHI T?/AU
L18 0 S L16 AND L17

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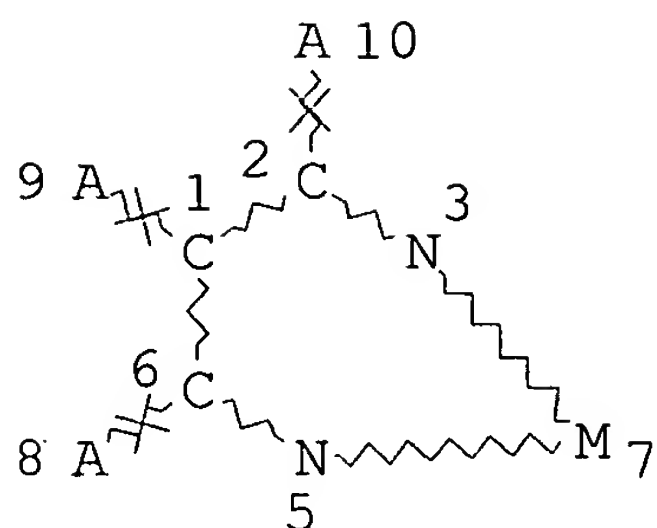
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L21 13 S L20 AND (EL OR ELECTROLUMINE? OR LIGHT?(3A)EMIT?)
L22 24 S L21 OR L16
SET COST OFF

=> d que stat

L3 SCR 1964
L4 SCR 1921
L5 SCR 1931
L10 STR



NODE ATTRIBUTES:

NSPEC IS RC AT 8
 NSPEC IS RC AT 9
 NSPEC IS RC AT 10
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE

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 L13 33219 SEA FILE=HCA ABB=ON PLU=ON L12
 L16 17 SEA FILE=HCA ABB=ON PLU=ON L13 (L) (EL OR ELECTROLUMINE
 ? OR LIGHT?(3A)EMIT?)
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 ? OR LIGHT?(3A)EMIT?)
 L22 24 SEA FILE=HCA ABB=ON PLU=ON L21 OR L16

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L22 ANSWER 1 OF 24 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 141:380306 HCA

TITLE: Luminescent lanthanide(III)-chelated dendritic
 complexes having light-harvesting effect and
 their synthetic methods

INVENTOR(S): Kim, Hwan-Kyu; Roh, Soo-Gyun; Kim, Yong-Hee; Ka,
 Jae-Won; Baek, Nam-Seob; Nah, Min-Kook; Oh,
 Jae-Buem

PATENT ASSIGNEE(S): S. Korea

SOURCE: PCT Int. Appl., 110 pp.

DOCUMENT TYPE: CODEN: PIXXD2
 LANGUAGE: Patent
 FAMILY ACC. NUM. COUNT: English
 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|----------|
| WO 2004092185 | A1 | 20041028 | WO 2004-KR181 | 20040131 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |

PRIORITY APPLN. INFO.: KR 2003-24190 A 20030416

KR 2003-102338 A 20031231

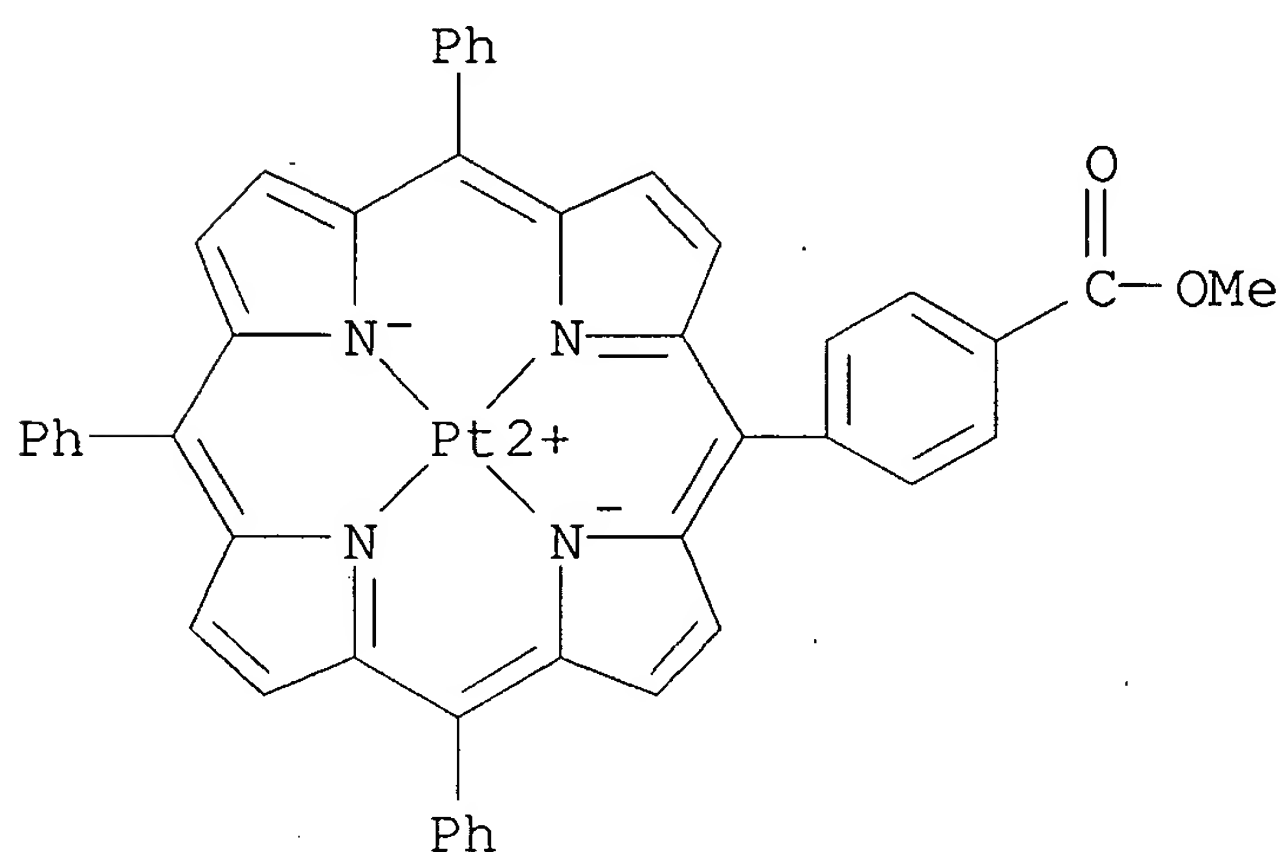
KR 2003-102339 A 20031231

AB The present invention relates to new organic luminescent complex compds. containing rare earth metal ions, and methods for preparing the same. The compds. have photophys. properties which are maximized by processes of absorbing and transferring artificial light using the principle of photosynthetic antenna complexes. The compds. have a structure where the rare earth metal ions are efficiently encapsulated with organic ligand derivs.

IT **631842-77-8P**, [5,10,15-Triphenyl-20-(4-methoxycarbonylphenyl)porphyrin]platinum (intermediate, dendrimer core; production of luminescent lanthanide(III)-chelated dendritic complexes having

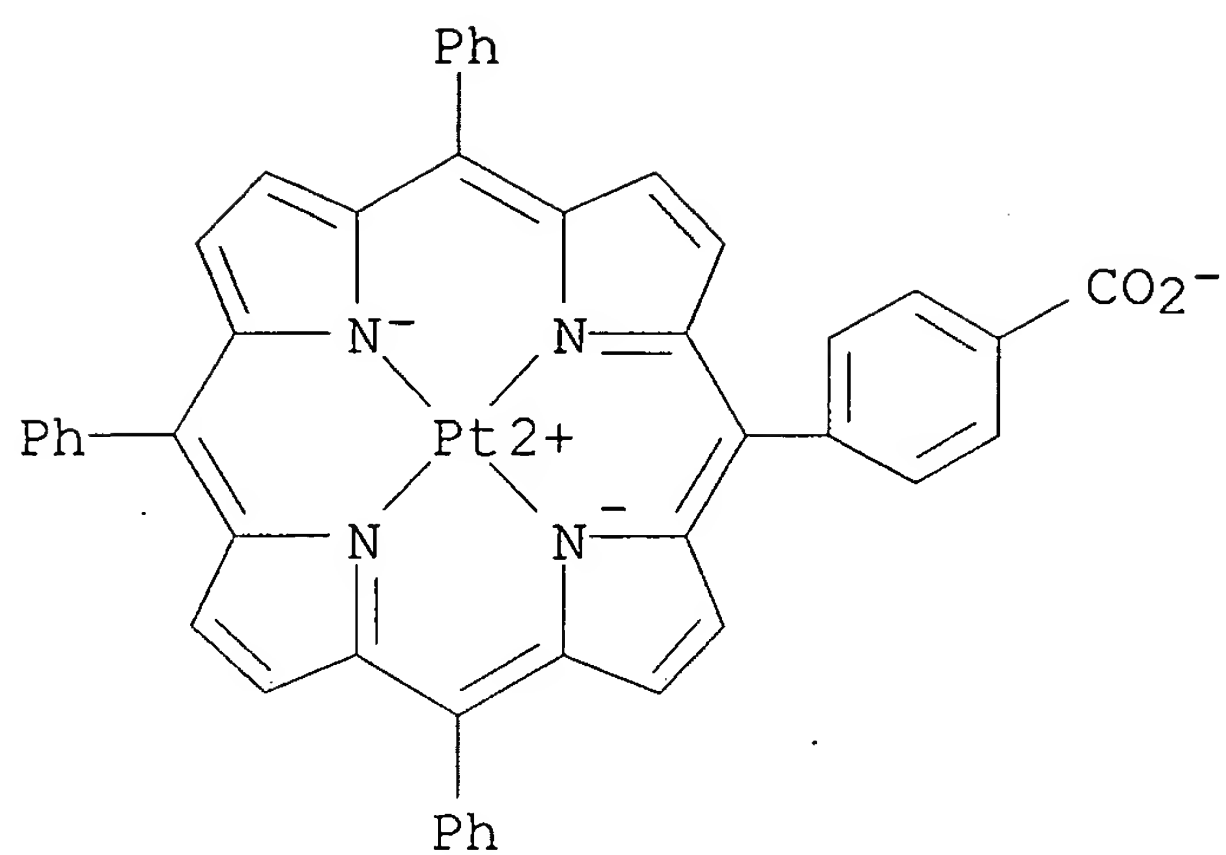
light-harvesting effect)

RN 631842-77-8 HCA
 CN Platinum, [methyl 4-(10,15,20-triphenyl-21H,23H-porphin-5-yl-
 κ N21, κ N22, κ N23, κ N24)benzoato(2-)]-,
 (SP-4-2)- (9CI) (CA INDEX NAME)



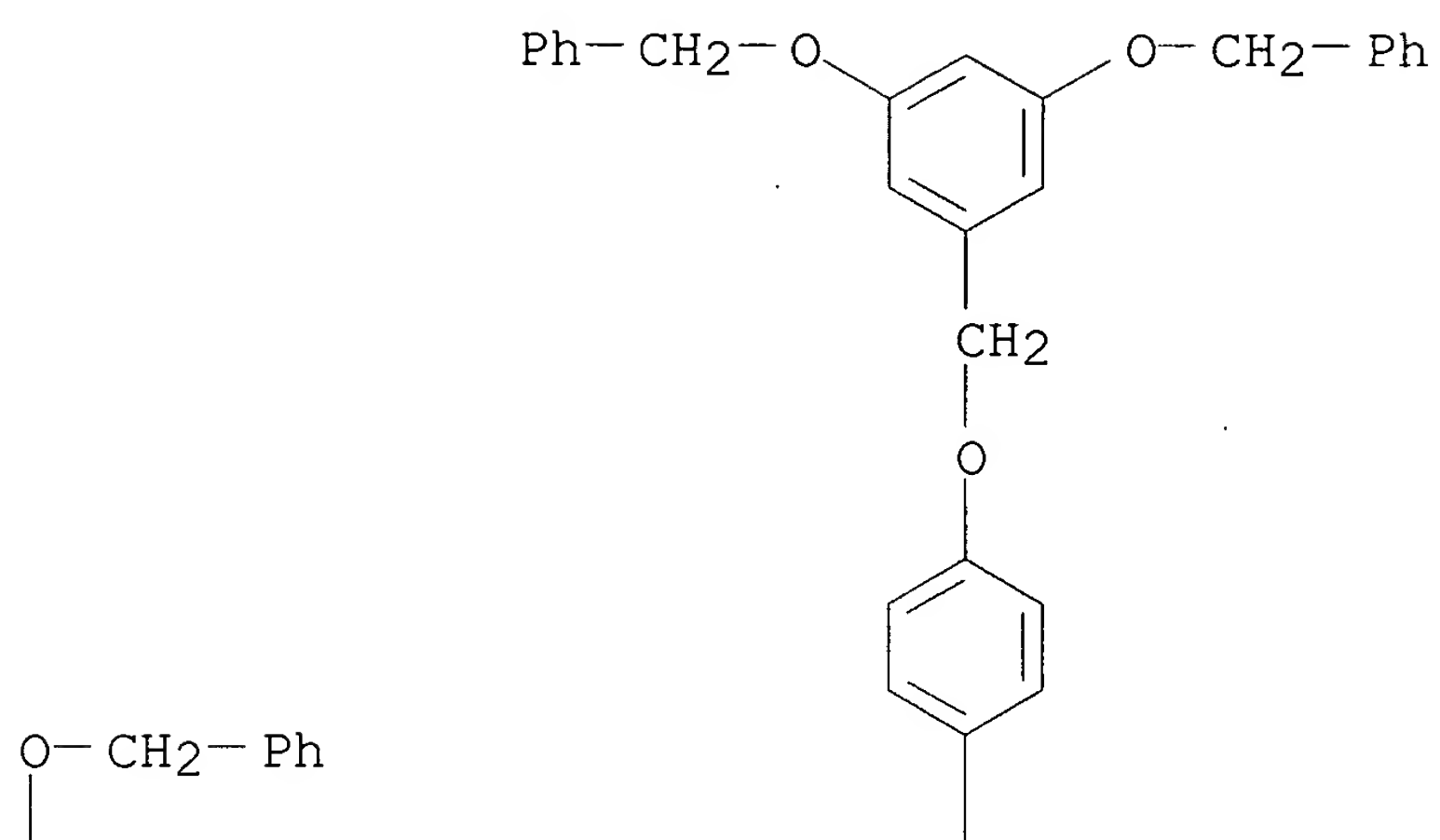
IT 631842-78-9P, [5,10,15-Triphenyl-20-(4-
 carboxyphenyl)porphyrin]platinum 780783-06-4P
 780783-07-5P 780783-10-0P 780783-11-1P
 (intermediate; production of luminescent lanthanide(III)-chelated
 dendritic complexes having light-harvesting effect)

RN 631842-78-9 HCA
 CN Platinate(1-), [4-(10,15,20-triphenyl-21H,23H-porphin-5-yl-
 κ N21, κ N22, κ N23, κ N24)benzoato(3-)]-,
 hydrogen, (SP-4-2)- (9CI) (CA INDEX NAME)

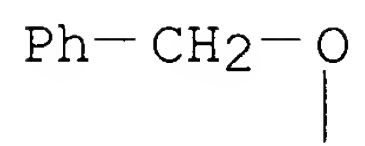


RN 780783-06-4 HCA
CN INDEX NAME NOT YET ASSIGNED

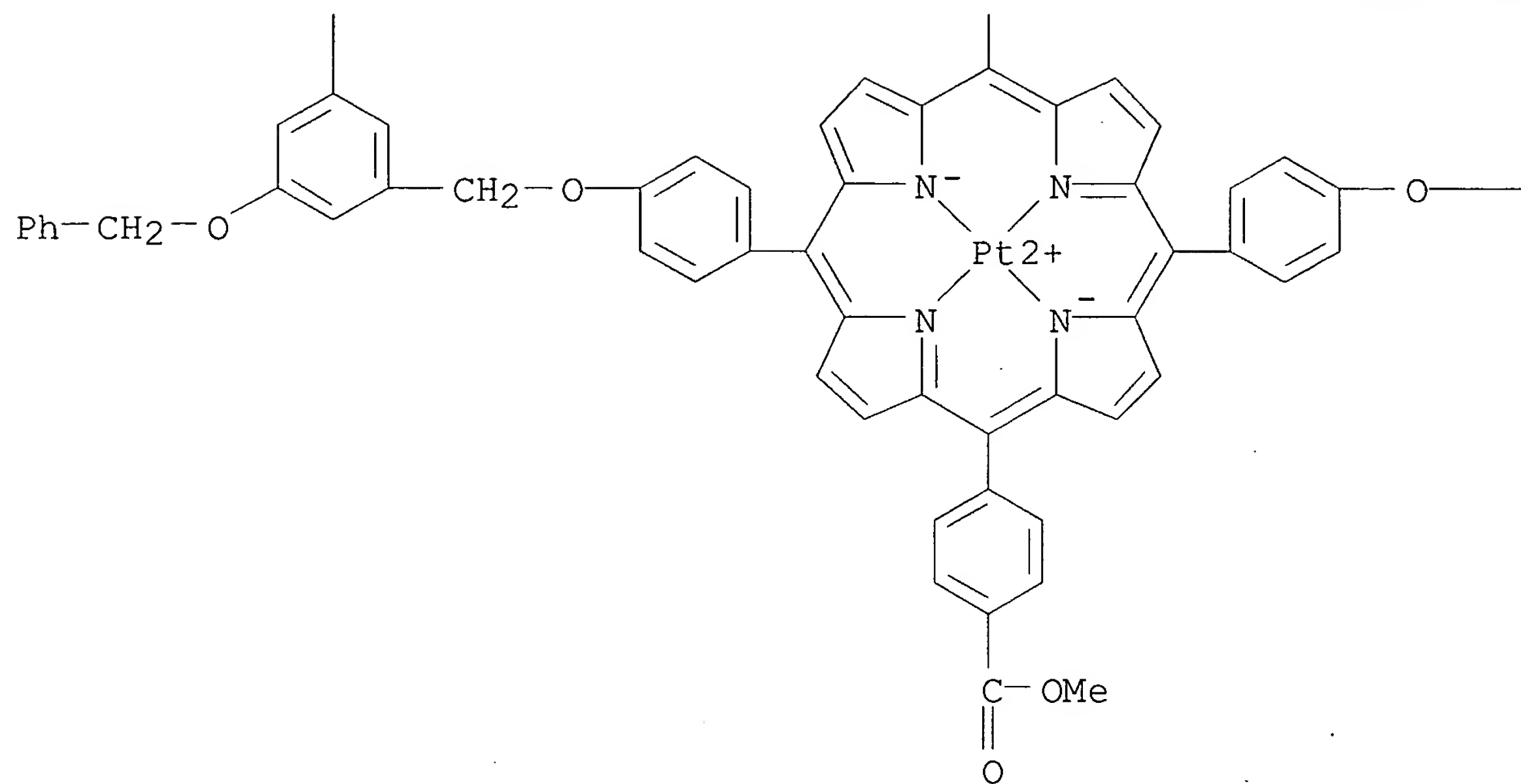
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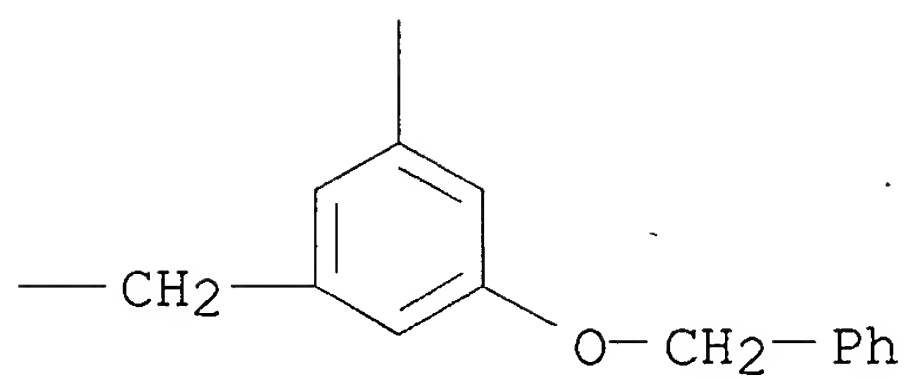
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PAGE 2-A

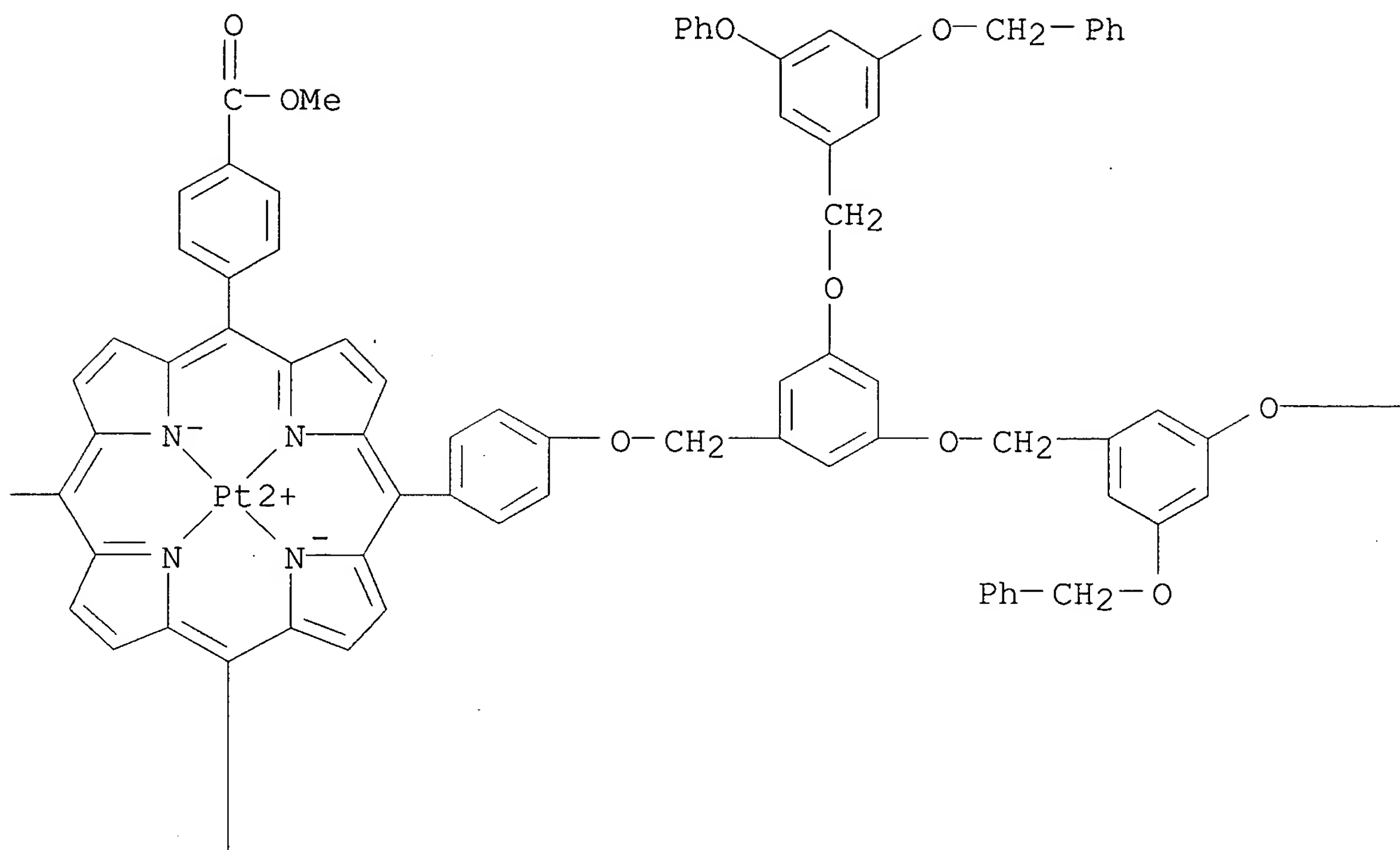


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RN 780783-07-5 HCA
CN INDEX NAME: NOT YET ASSIGNED

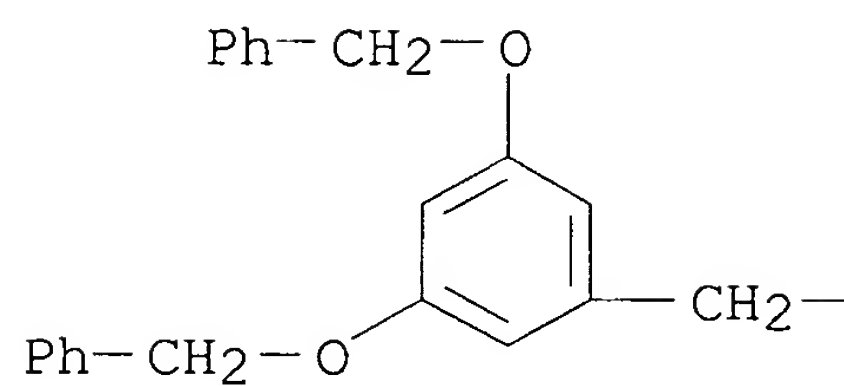
PAGE 1-B



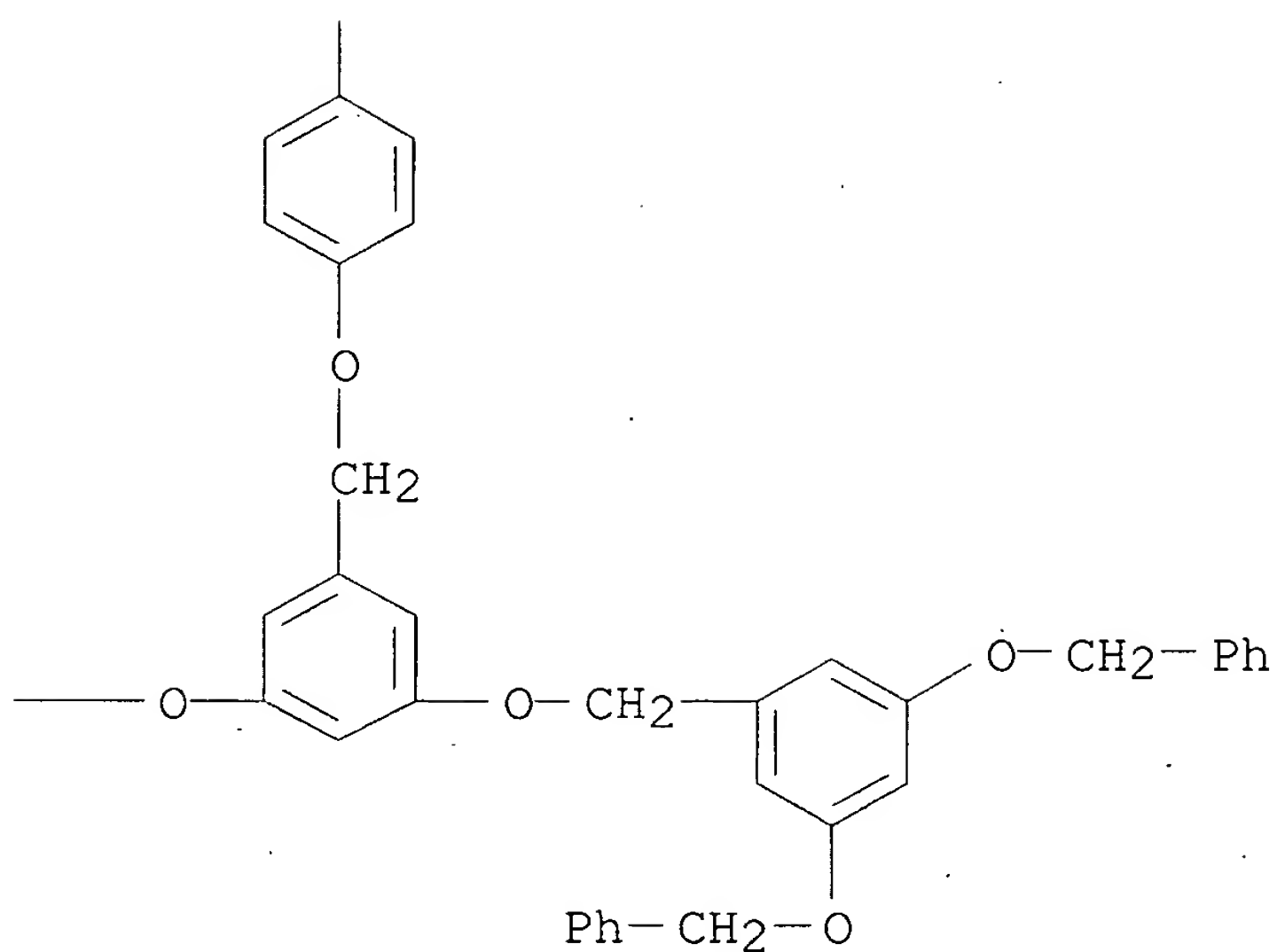
PAGE 1-C

-CH₂-Ph

PAGE 2-A

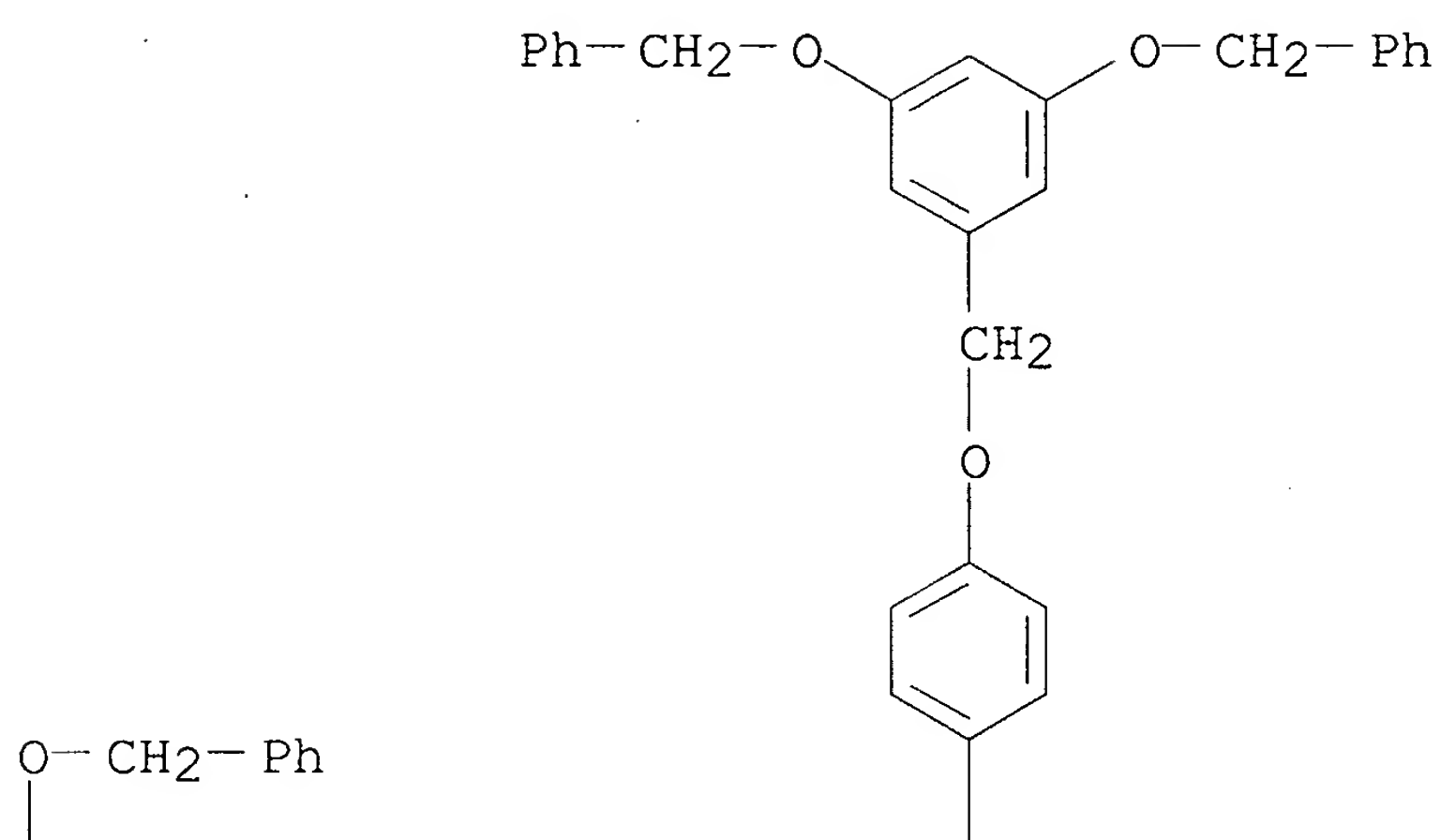


PAGE 2-B

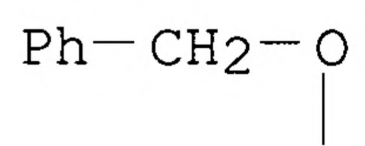


RN 780783-10-0 HCA
 CN Platinate(1-), [4-[10,15,20-tris[4-[[3,5-bis(phenylmethoxy)phenyl]methoxy]phenyl]-21H,23H-porphin-5-yl-
 κN21,κN22,κN23,κN24]benzoato(3-)]-,
 hydrogen, (SP-4-2)-(9CI) (CA INDEX NAME)

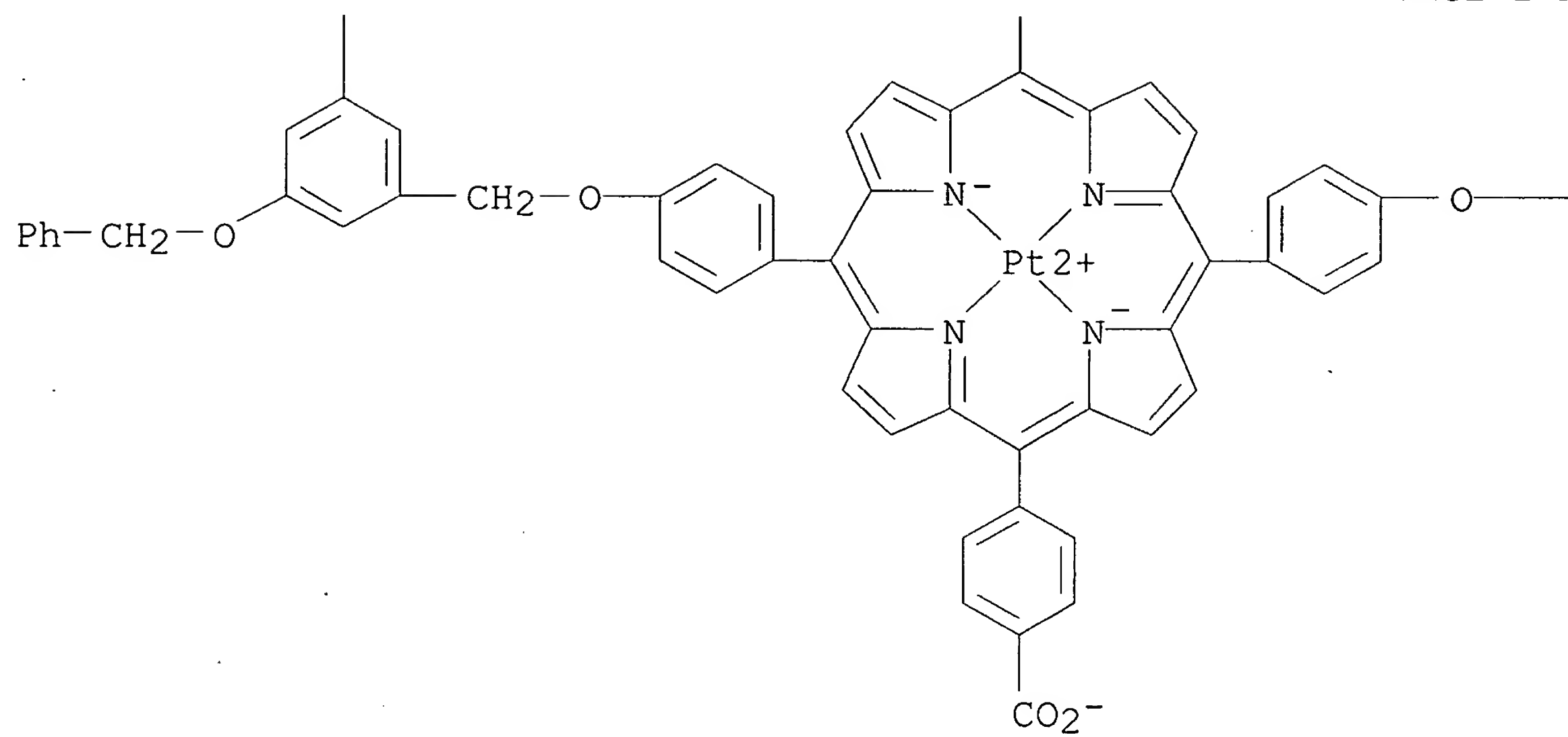
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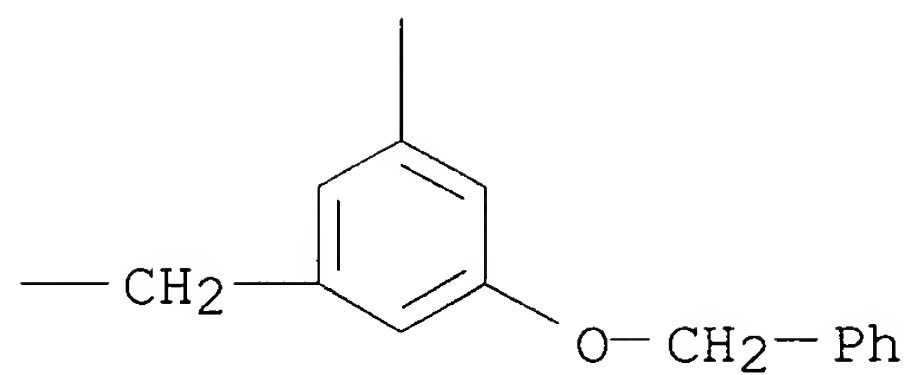
PAGE 1-B



PAGE 2-A

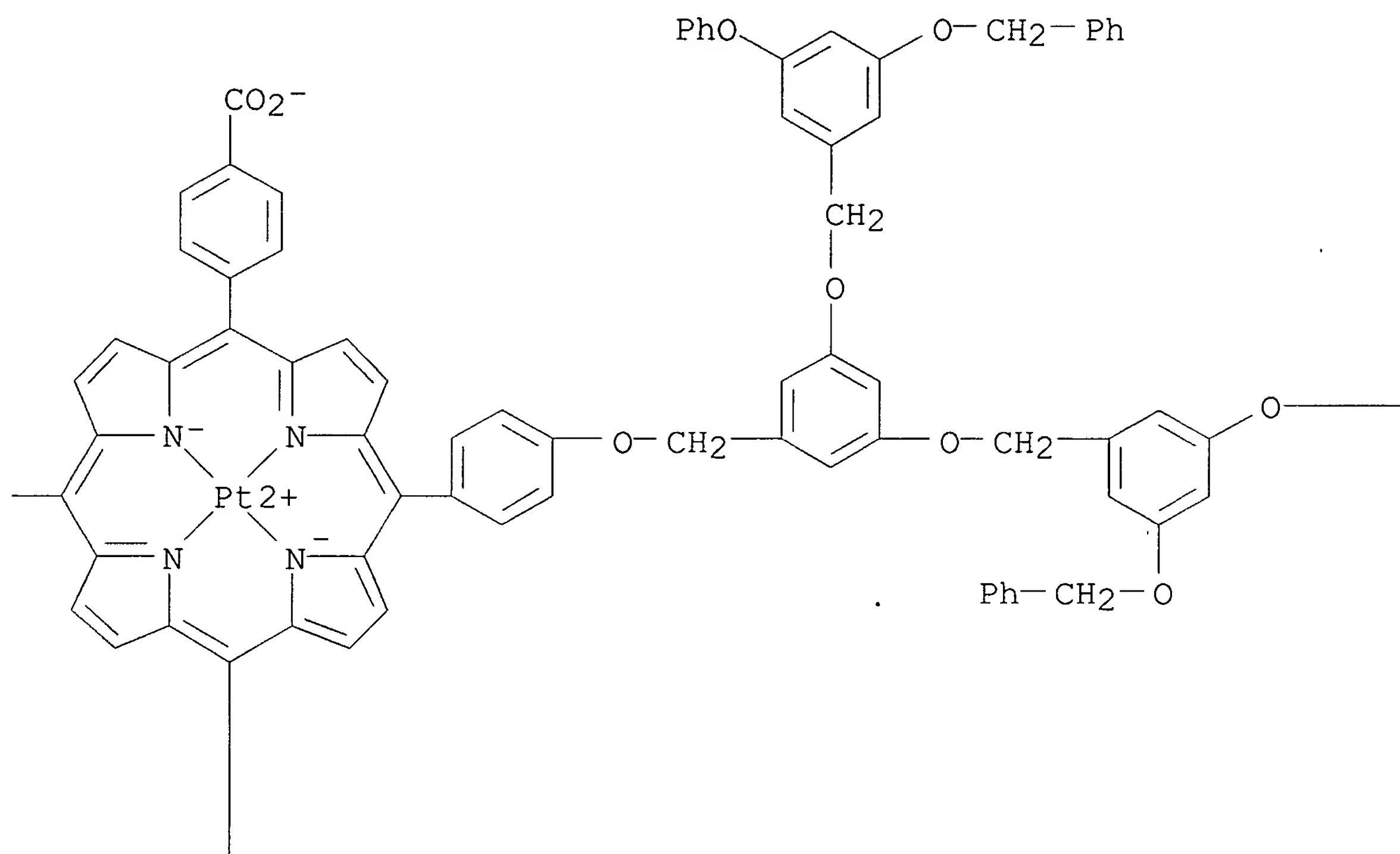
● H⁺

PAGE 2-B



RN 780783-11-1 HCA
CN INDEX NAME NOT YET ASSIGNED

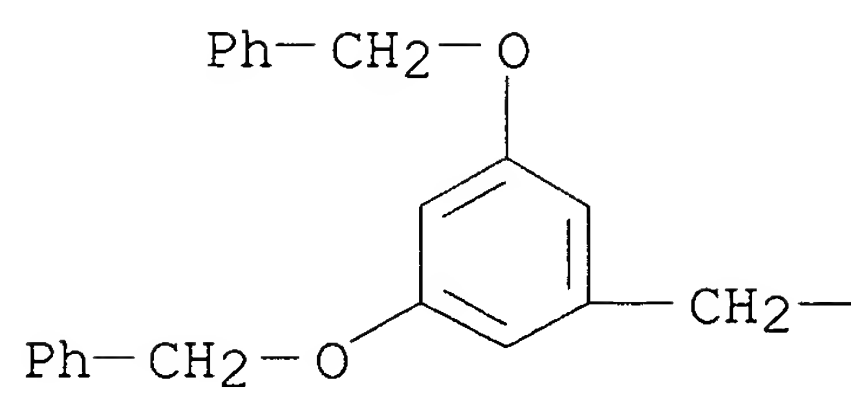
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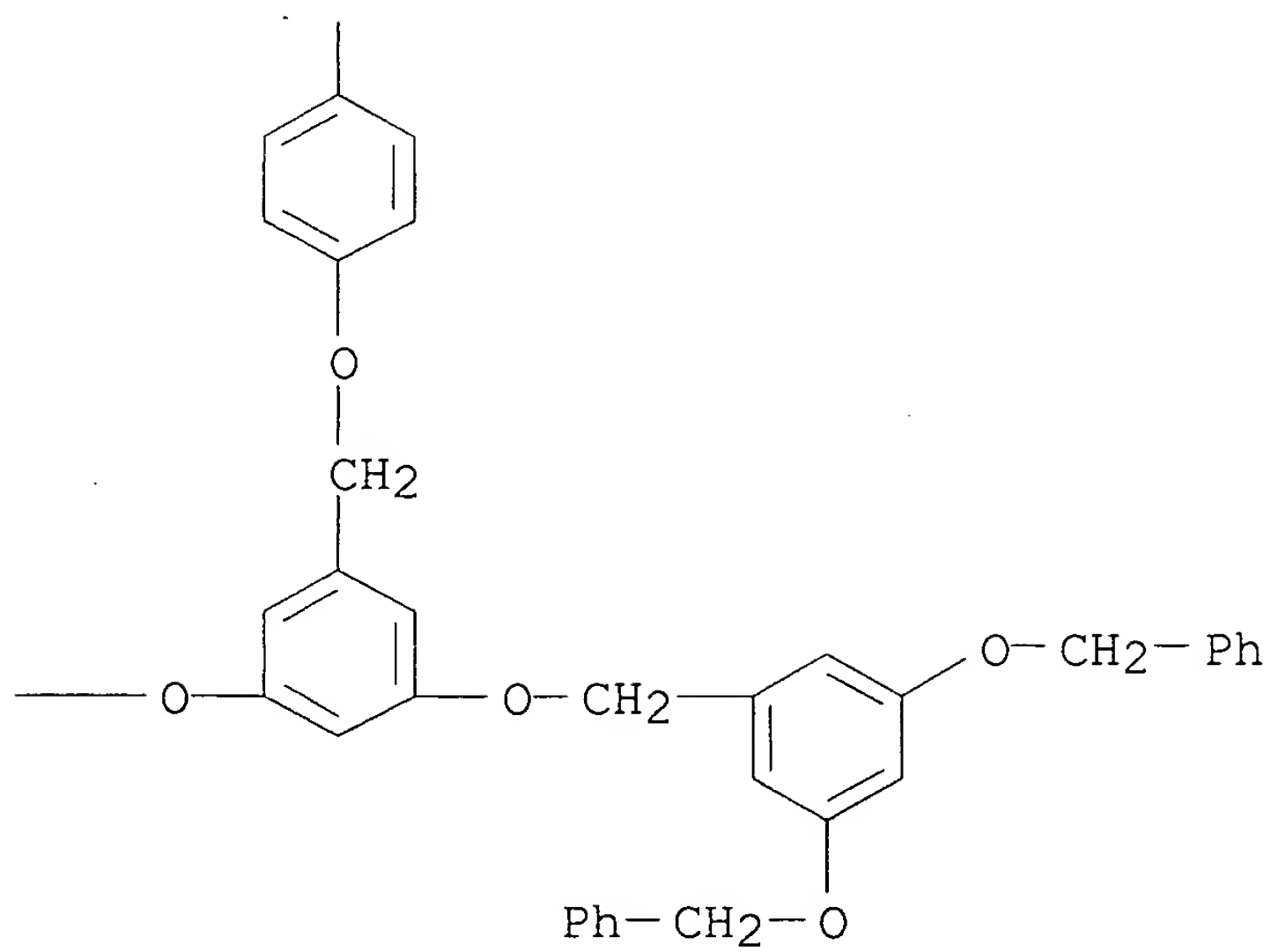
PAGE 1-C

—CH₂—Ph

PAGE 2-A



PAGE 2-B



CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 73, 78

IT Luminescent substances
(**electroluminescent**; production of luminescent
lanthanide(III)-chelated dendritic complexes having
light-harvesting effect)

IT 119730-06-2P 202007-73-6P, [5,10,15-Triphenyl-20-(4-
methoxycarbonylphenyl)porphyrin]zinc **631842-77-8P**,
[5,10,15-Triphenyl-20-(4-methoxycarbonylphenyl)porphyrin]platinum
778612-42-3P 780775-14-6P 780775-18-0P
(intermediate, dendrimer core; production of luminescent
lanthanide(III)-chelated dendritic complexes having
light-harvesting effect)

IT 95051-10-8P 106359-69-7P, 1-(4-Carboxyphenyl)-naphthalene
107798-98-1P, 5-Phenyldipyrromethane 133849-77-1P,
[5,10,15-Triphenyl-20-(4-carboxyphenyl)porphyrin]zinc
167482-99-7P, 5-(4-Methoxycarbonylphenyl)dipyrromethane
414866-50-5P **631842-78-9P**, [5,10,15-Triphenyl-20-(4-
carboxyphenyl)porphyrin]platinum 778612-41-2P,
1-(4-Carboxyphenyl)-10 4-(4-methoxyphenyl)naphthalene 780774-78-9P
780774-81-4P 780774-84-7P 780774-87-0P 780774-89-2P
780774-91-6P 780774-93-8P 780774-95-0P 780774-99-4P
780775-05-5P, 9-(4-Carbonylphenyl)-10-(4-methoxyphenyl)anthracene
780775-22-6P 780775-26-0P 780775-34-0P 780775-38-4P
780775-42-0P 780775-46-4P 780775-50-0P 780775-54-4P
780783-04-2P 780783-05-3P **780783-06-4P**
780783-07-5P 780783-09-7P **780783-10-0P**
780783-11-1P
(intermediate; production of luminescent lanthanide(III)-chelated
dendritic complexes having light-harvesting effect)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

L22 ANSWER 2 OF 24 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 141:288131 HCA

TITLE: Metal complexes with tripodal ligands as
charge-carrier blocking materials for
electroluminescent devices

INVENTOR(S): Stoebel, Philipp; Spreitzer, Hubert

PATENT ASSIGNEE(S): Covion Organic Semiconductors G.m.b.H., Germany

SOURCE: PCT Int. Appl., 81 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|----------|
| ----- | ---- | ----- | ----- | |
| WO 2004081017 | A1 | 20040923 | WO 2004-EP2393 | 20040309 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| DE 10310887 | A1 | 20040930 | DE 2003-10310887 | 20030311 |
| PRIORITY APPLN. INFO.: | | | DE 2003-10310887 | A |
| | | | | 20030311 |

OTHER SOURCE(S): MARPAT 141:288131

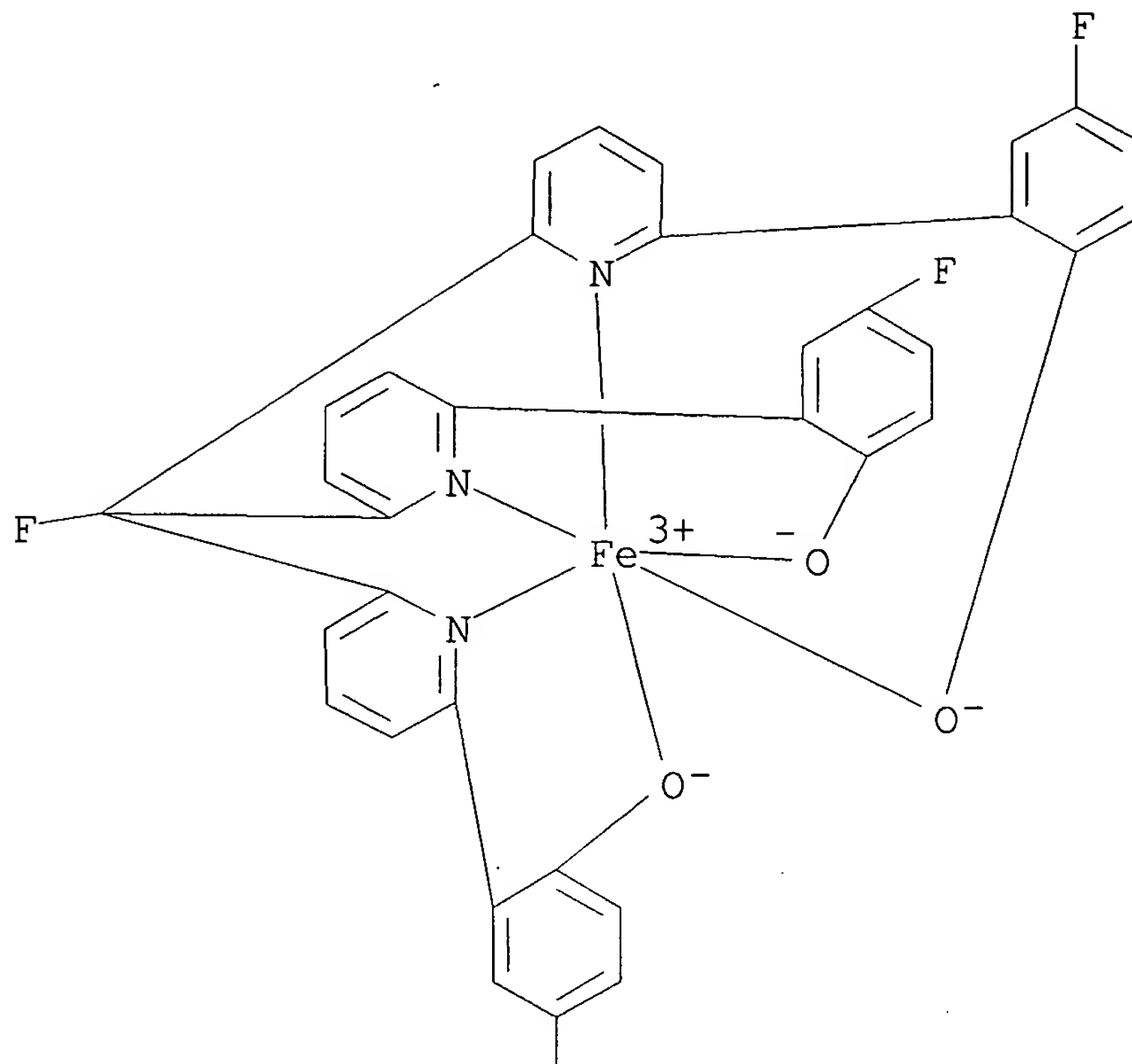
AB Novel metal complexes with tripodal ligands are claimed as charge-carrier blocking materials for electroluminescent devices. For example, the charge-carrier blocking material All (H3L = tris(6-(2-hydroxyphenyl)-2-pyridyl)phosphine oxide) was prepared from Al(OPri)3 and H3L which was prepared starting from oxidation of tris(2-bromo-6-pyridyl)phosphine, followed by methoxylation and subsequently by hydrolysis.

IT 760177-64-8P
 (preparation of charge-carrier blocking material for electroluminescent devices)

RN 760177-64-8 HCA

CN INDEX NAME NOT YET ASSIGNED

PAGE 1-A



PAGE 2-A

F

IC ICM C07F001-12
 ICS C07F005-00; C07F015-00
 CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 27, 29, 73
 IT 760177-61-5P 760177-62-6P 760177-63-7P 760177-64-8P
 760177-65-9P

(preparation of charge-carrier blocking material for
electroluminescent devices)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L22 ANSWER 3 OF 24 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 141:285430 HCA

TITLE: Near-Infrared Photo- and Electroluminescence of Alkoxy-Substituted Poly(p-phenylene) and Nonconjugated Polymer/Lanthanide Tetraphenylporphyrin Blends

AUTHOR(S): Harrison, Benjamin S.; Foley, Timothy J.; Knefely, Alison S.; Mwaura, Jeremiah K.; Cunningham, Garry B.; Kang, Tae-Sik; Bouguettaya, Mohamed; Boncella, James M.; Reynolds, John R.; Schanze, Kirk S.

CORPORATE SOURCE: Department of Chemistry and Center for Macromolecular Science and Engineering, University of Florida, Gainesville, FL, 32611-7200, USA

SOURCE: Chemistry of Materials (2004), 16(15), 2938-2947
CODEN: CMATEX; ISSN: 0897-4756

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The photoluminescent and electroluminescent properties of near-IR (near-IR) emitting lanthanide monoporphyrinate complexes, Ln(TPP)L (L = hydridotris(1-pyrazolyl)borate (Tp) or (cyclopentadienyl)tris(diethylphosphinito)cobaltate(I) L(OEt)) blended into conjugated and nonconjugated polymer hosts were characterized. A blue-emitting alkoxy-substituted poly(p-phenylene) (PPP-OR11) was used as the conjugated polymer host and nonconjugated hosts included polystyrene, poly(Me methacrylate), poly(Bu methacrylate), and poly(bisphenol A-carbonate). Complete quenching of the PPP-OR11 host fluorescence (i.e., > 95%) is observed at 5 mol % of Ln(TPP)Tp, and host quenching is accompanied by sensitization of near-IR emission from the lanthanide complex. The photoluminescence results suggest that energy transfer occurs from PPP-OR11 to Ln(TPP)L, presumably via the Foerster mechanism. Near-IR light emitting diodes (PLEDs) consisting of Yb(TPP)Tp blended into PPP-OR11 and the nonconjugated polymer hosts were characterized. PLEDs fabricated with PPP-OR11 exhibited turn-on voltages of .apprx.4 V, whereas nonconjugated polymer devices had higher turn-on voltages (.apprx.8 V), independent of the polymer used. Comparable external electroluminescence (EL) efficiencies .apprx.10⁻⁴ were observed from both the conjugated and nonconjugated polymer host devices. Taken together, the available evidence suggests that the dominant mechanism operating in the EL devices involves the Ln(TPP)L complex as the charge-transport material, the center for electron-hole recombination, and the emitter.

IT 479063-81-5

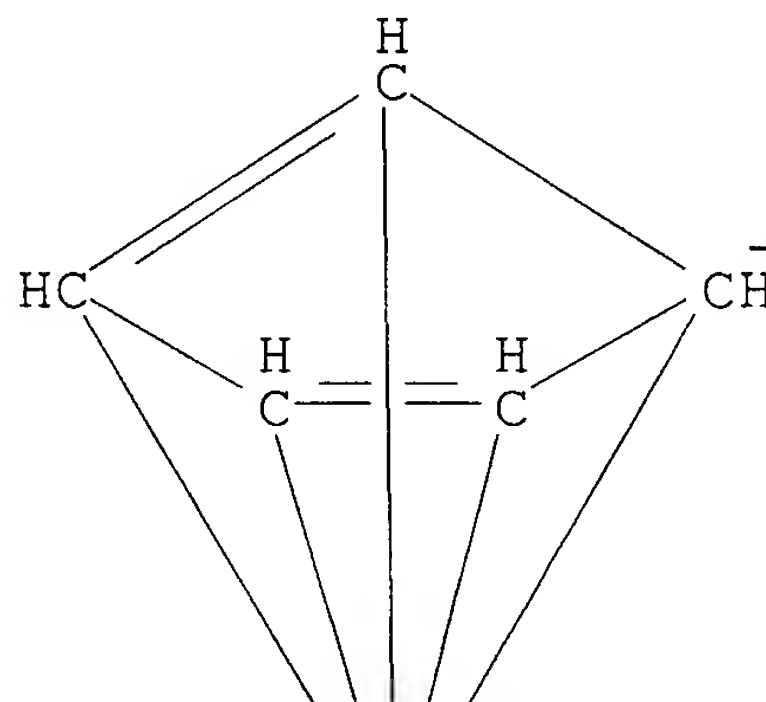
(near-IR photo- and **electroluminescence** of alkoxy-substituted poly(p-phenylene) and nonconjugated

polymer/lanthanide tetraphenylporphyrin blends)

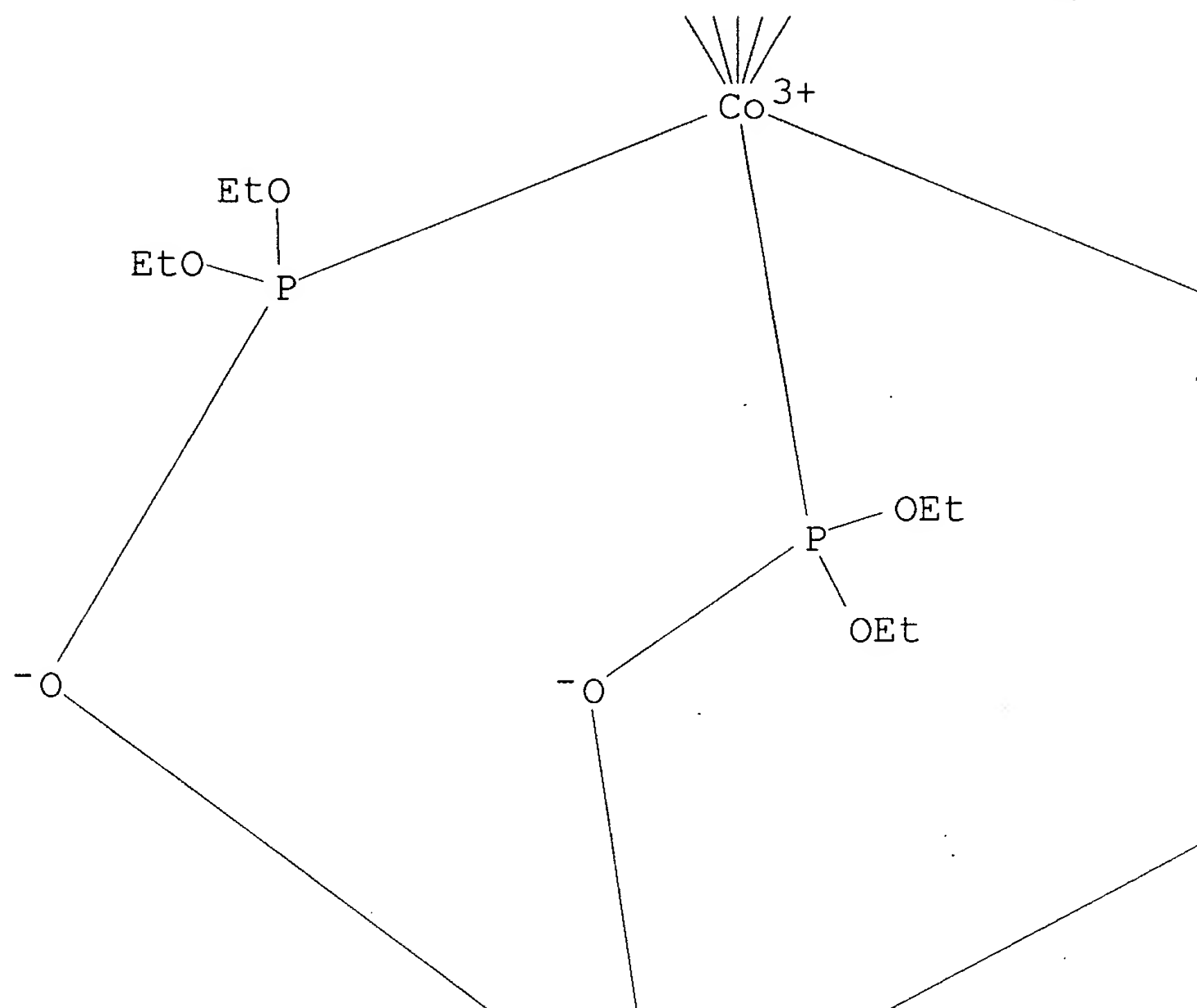
RN 479063-81-5 HCA

CN Ytterbium, [(η^5 -2,4-cyclopentadien-1-yl)cobalt]tris[μ -(diethyl phosphito- $\kappa O'' : \kappa P$)] [5,10,15,20-tetraphenyl-21H,23H-porphinato(2-)- $\kappa N21, \kappa N22, \kappa N23, \kappa N24$]-, (TPS-7-2-11132'3')- (9CI) (CA INDEX NAME)

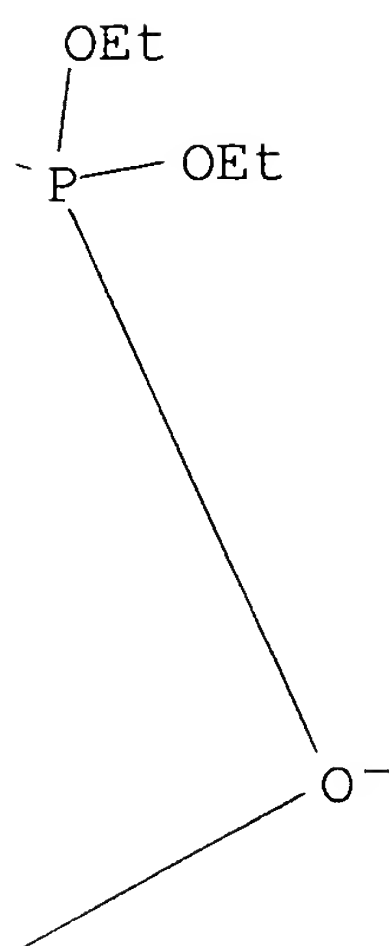
PAGE 1-B



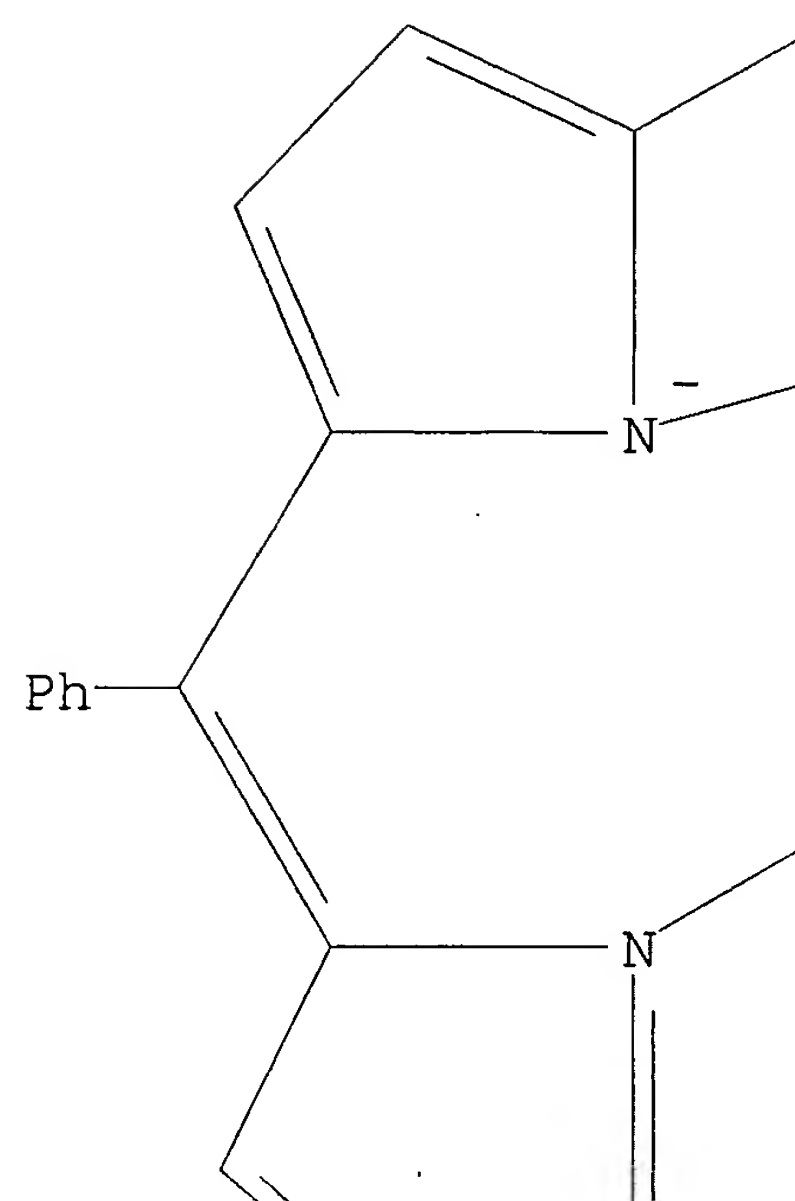
PAGE 2-B



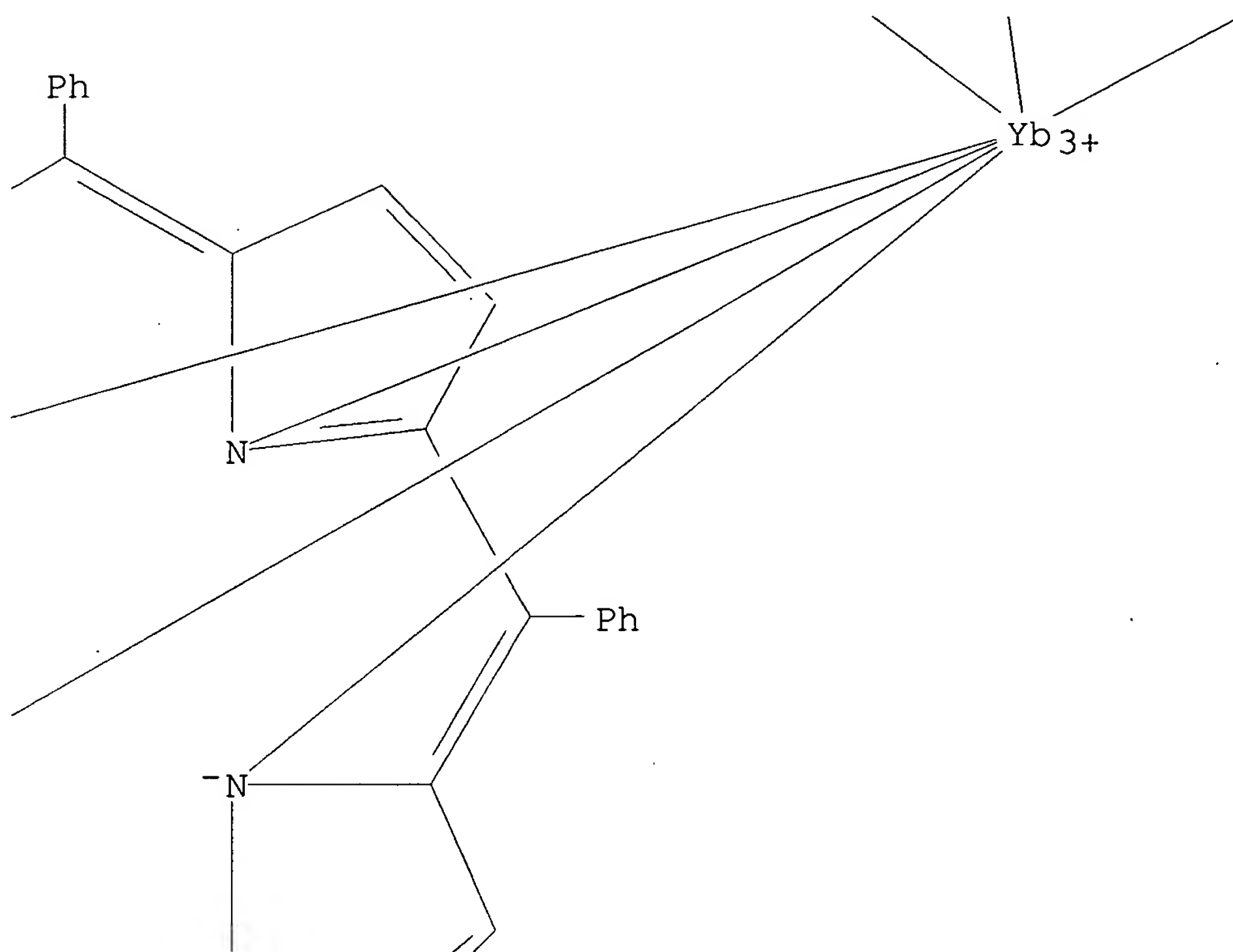
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PAGE 3-A



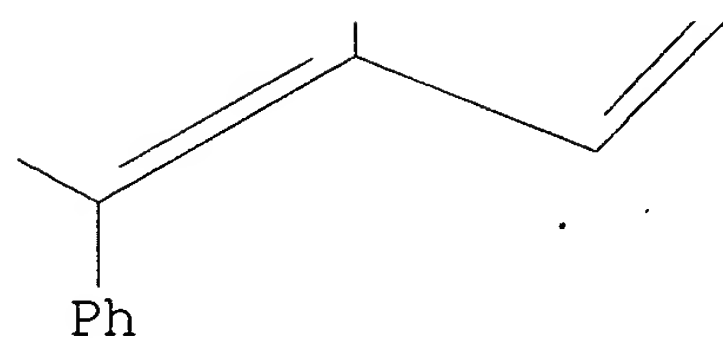
PAGE 3-B



PAGE 4-A



PAGE 4-B



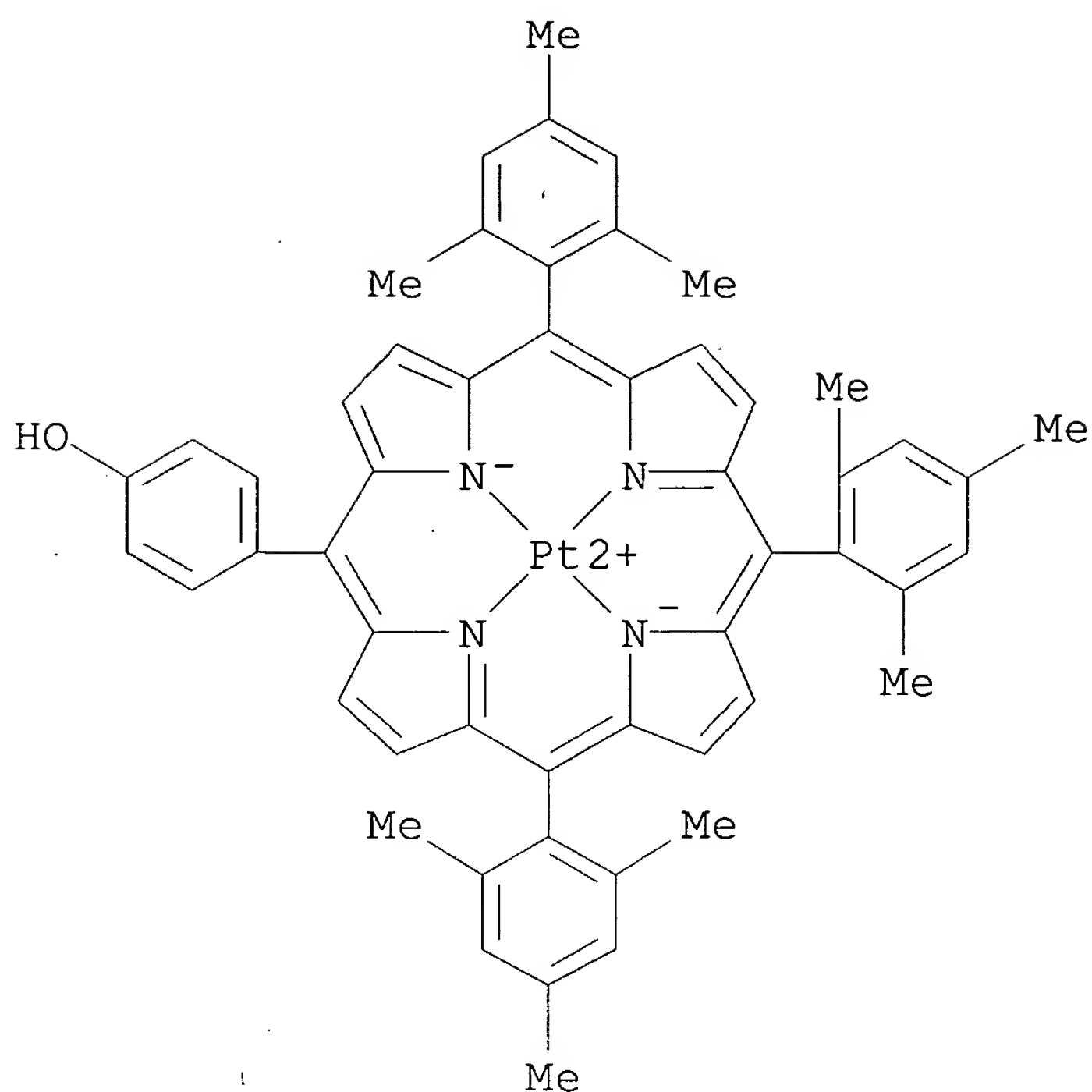
Properties)
IT 9003-53-6, Polystyrene 9011-14-7, PMMA 25037-45-0,
Poly(Bisphenol-A-carbonate) 187754-90-1 478931-86-1
478931-88-3 478931-89-4 **479063-81-5** 479063-84-8
479063-85-9
(near-IR photo- and **electroluminescence** of
alkoxy-substituted poly(p-phenylene) and nonconjugated
polymer/lanthanide tetraphenylporphyrin blends)
REFERENCE COUNT: 53 THERE ARE 53 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L22 ANSWER 4 OF 24 HCA COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 141:156922 HCA
TITLE: One-pot synthesis of new functionalized
azacryptands from resorcinol derivatives for
advanced photonic materials
AUTHOR(S): Ka, Jae-Won; Kim, Hwan Kyu
CORPORATE SOURCE: Center for Smart Light-Harvesting Materials and
Department of Polymer Science & Engineering,
Hannam University, Daejeon, 306-791, S. Korea
SOURCE: Tetrahedron Letters (2004), 45(23), 4519-4523
CODEN: TELEAY; ISSN: 0040-4039
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Functionalized azacryptands containing resorcinol derivs. such as
orcinol (5-methylresorcinol), 3,5-dihydroxybenzoic acid
(5-carboxyresorcinol), and Me 3,5-dihydroxybenzoate
(5-methoxycarbonylresorcinol) were synthesized by one-pot synthesis
in the presence of potassium carbonate with moderately good yields
for advanced photonic materials, such as optical amplifying and
light-emitting materials, for the first time to
the authors' knowledge. Lanthanide(III)-encapsulated azacryptand
complexes were also synthesized. The structure of the compds. were
established on the basis of spectroscopic data and x-ray diffraction
anal.

IT **727986-76-7**
(one-pot preparation of functionalized azacryptands from resorcinol
derivs. and tris(chloroethyl)amine and formation of their stable
lanthanide complexes)

RN 727986-76-7 HCA
CN Platinum, [4-[10,15,20-tris(2,4,6-trimethylphenyl)-21H,23H-porphin-5-
yl-κN21,κN22,κN23,κN24]phenolato(2-)]-,
(SP-4-2)- (9CI) (CA INDEX NAME)



CC 25-29 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 Section cross-reference(s): 73, 75, 78

IT 99-10-5, 3,5-Dihydroxybenzoic acid 555-77-1 2150-44-9, Methyl
 3,5-dihydroxybenzoate 6153-39-5, Orcinol monohydrate
727986-76-7

(one-pot preparation of functionalized azacryptands from resorcinol
 derivs. and tris(chloroethyl)amine and formation of their stable
 lanthanide complexes)

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L22 ANSWER 5 OF 24 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 141:30826 HCA

TITLE: Optical or electric devices, and
 planar-coordinated organic transition metal
 complexes for them

INVENTOR(S): Ikai, Masamichi; Kajioaka, Takanori; Takeuchi,
 Hisato; Fujikawa, Hisayoshi; Taga, Yasunori;
 Osuka, Atsuhiko

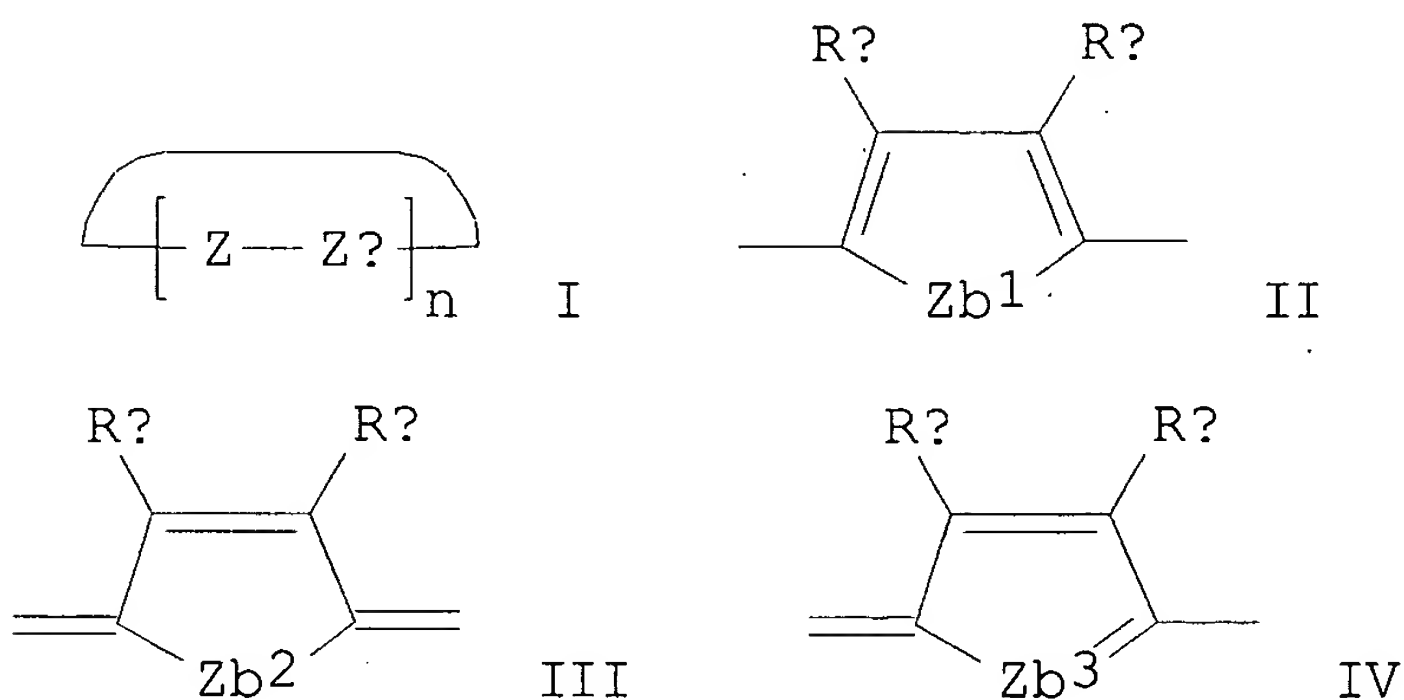
PATENT ASSIGNEE(S): Toyota Central Research and Development
 Laboratories, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 62 pp.

DOCUMENT TYPE: CODEN: JKXXAF
 LANGUAGE: Patent
 FAMILY ACC. NUM. COUNT: Japanese
 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| JP 2004155711 | A2 | 20040603 | JP 2002-323216 | 20021106 |
| PRIORITY APPLN. INFO.: | | | JP 2002-323216 | 20021106 |

OTHER SOURCE(S): MARPAT 141:30826
 GI



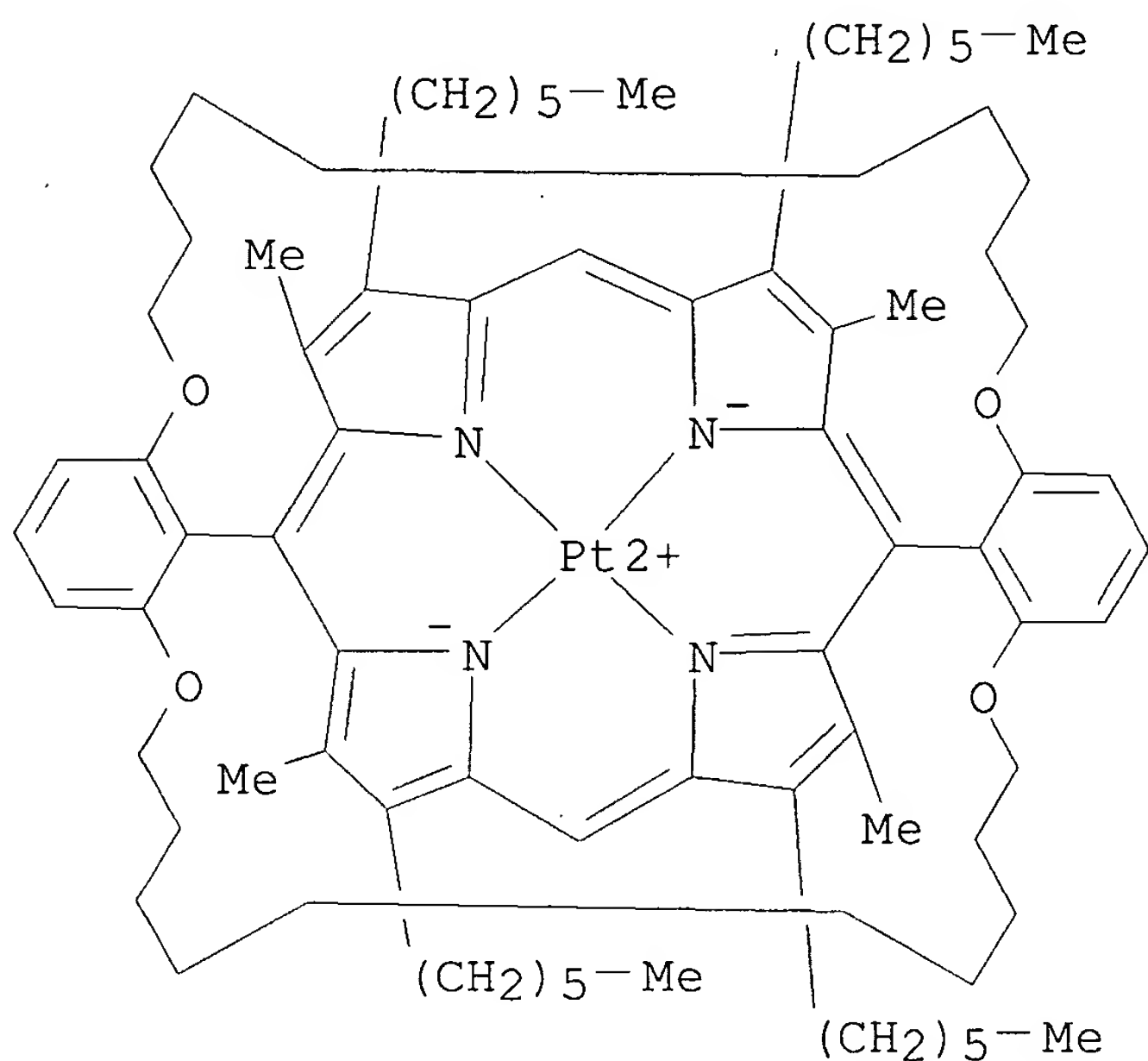
AB The devices use planar-coordinated organic transition metal complexes having ≥ 2 bridged structures above and below the planes, wherein central metals are covered with the structures. Preferably, the devices have luminescent, charge transport, nonlinear optical, gas detection, odor detection, spatial light modulation, photoelec. conversion, optical switch, or rectification properties. The complexes have planar ligands I [$Za = II-IV$; $Zb1-Zb3 = N, NH, C$; $RA, RB = H, C$ -containing substituent; $RARB$ may form ring; $Z = (XRnRn')n1, (:XRn)n2, Arn3, Z1n4, :N, :P$; $X = C, Si, CmlSim2$; $Ar = arylene$; $Z1 = NR, O, S, PR$; $R = alkyl$; $n1-n4 = natural\ number$] or are expressed as metalloporphyrins having bridged structures. The bridge structures protect central metals and prevent the complexes from overlapping in thin films, resulting in high-performance devices, e.g., organic **electroluminescent** devices.

IT 699009-45-5P

(dopants in emitter layer; planar-coordinated organic transition metal complexes having central metals covered with bridge structures for organic **electroluminescent** devices)

RN 699009-45-5 HCA

CN Platinum, [24,28,35,42-tetrahexyl-6,7,8,9,10,11,12,13,14,15-decahydro-23,29,36,41-tetramethyl-39H-1,20-(epoxydecanoxy)-27,30-imino-22,25-nitrilo-21,31-([2,5]-endo-pyrrolometheno[2]pyrrolyl[5]ylidene)-25H-dibenzo[m,z][1,12]dioxacycloheptacosinato(2-)- κ N33, κ N39, κ N43, κ N44]-, (SP-4-1)-(9CI) (CA INDEX NAME)

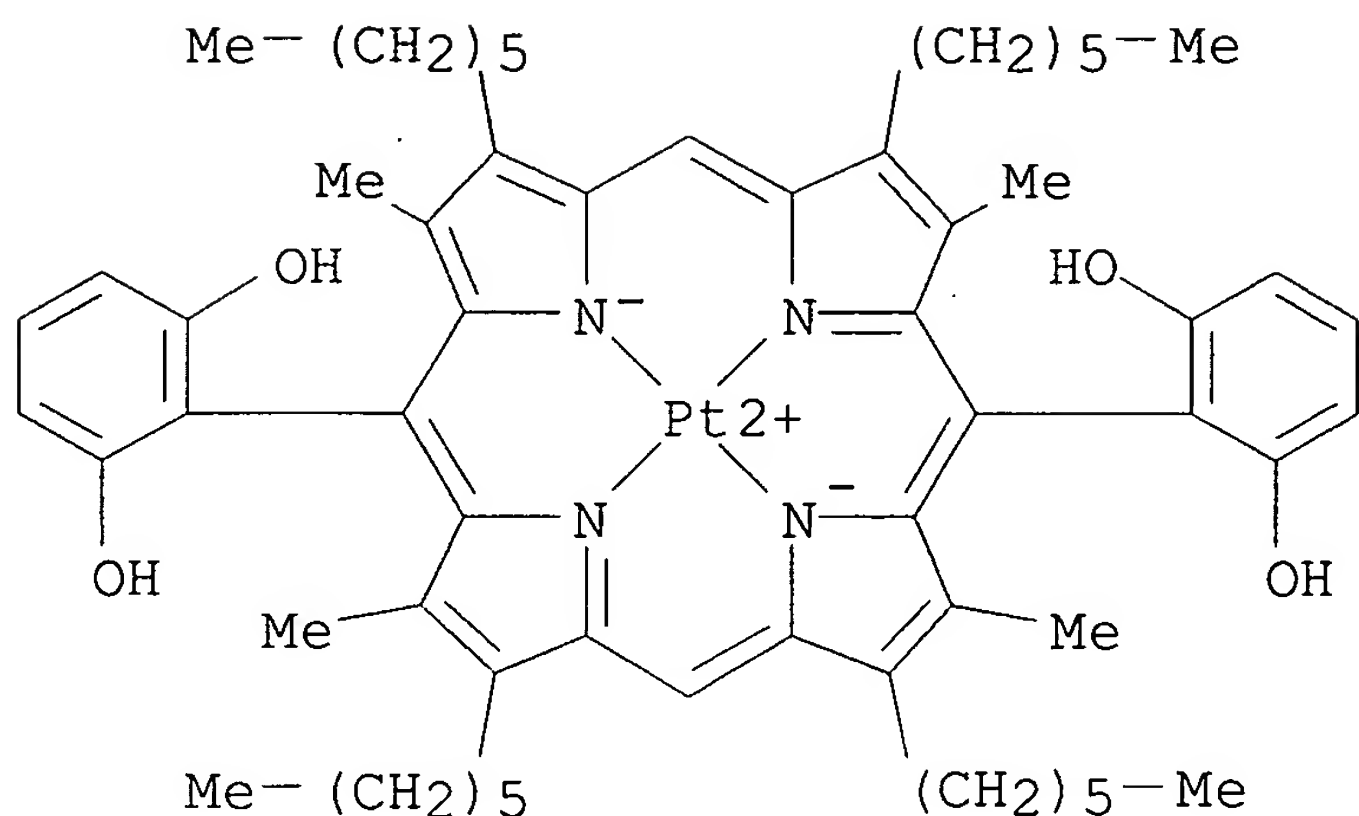


IT 699009-46-6P

(planar-coordinated organic transition metal complexes having central metals covered with bridge structures for organic **electroluminescent** devices)

RN 699009-46-6 HCA

CN Platinum, [[2,2'-(2,8,12,18-tetrahexyl-3,7,13,17-tetramethyl-21H,23H-porphine-5,15-diyl- κ N21, κ N22, κ N23, κ N24)bis[1,3-benzenediolato]](2-)]-, (SP-4-1)-(9CI) (CA INDEX NAME)



- IC ICM C07D487-22
ICS C09K011-06; G02F001-061; G02F001-361; H01L051-00; H05B033-14;
C07F015-00
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 52, 76, 78
- ST org **electroluminescent** device bridged metalloporphyrin;
bridged platinum porphyrin org **electroluminescent** device;
optical instrument planar org transition metal complex; gas sensor
planar org transition metal complex; photoelec converter planar org
transition metal complex; rectifier planar org transition metal
complex
- IT **Electroluminescent** devices
(planar-coordinated organic transition metal complexes having
central metals covered with bridge structures for organic
electroluminescent devices)
- IT 699009-45-5P
(dopants in emitter layer; planar-coordinated organic transition
metal complexes having central metals covered with bridge
structures for organic **electroluminescent** devices)
- IT 699009-47-7
(dopants in emitter layer; planar-coordinated organic transition
metal complexes having central metals covered with bridge
structures for organic **electroluminescent** devices)
- IT 137709-26-3P 699009-46-6P
(planar-coordinated organic transition metal complexes having
central metals covered with bridge structures for organic
electroluminescent devices)
- IT 16355-92-3, 1,10-Diiododecane 140170-53-2
(planar-coordinated organic transition metal complexes having
central metals covered with bridge structures for organic
electroluminescent devices)

L22 ANSWER 6 OF 24 HCA COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 140:254077 HCA
 TITLE: Reactive dendrimers and their modification and use
 INVENTOR(S): Samuel, Ifor David William; Burn, Paul Leslie; Frampton, Michael John
 PATENT ASSIGNEE(S): Isis Innovation Limited, UK; The University Court of the University of St. Andrews
 SOURCE: PCT Int. Appl., 48 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|----------|
| WO 2004020547 | A1 | 20040311 | WO 2003-GB3713 | 20030827 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: GB 2002-20092 A 20020829

AB Methods for modifying ≥ 1 dendron intended to form part of a dendrimer in which the dendron is described by the general formula $FO(dendrinite-Qa)_y$ (FO = a functional group attached, either directly or via a linking group which can contain one or more reactable unsatd. units, to the first branching atom or group of the dendrite; each dendrite may be the same or different and contains branching atoms or groups and optionally linking groups and comprises at least the first branching atom or group which must have, in addition to FO, ≥ 2 groups attached, ≥ 1 dendrite or, if present the linking group to FO, containing one or more reactable unsatd. units; y

≥ 1 ; Q = a surface group; and a = 0 or an integer, with the restriction that, when a = 0, the distal group of each arm of the or each dendrite is a (hetero)aryl group) are described which entail reacting ≥ 1 reactable unsatd. group in a chemoselective manner to form a less unsatd. group. Similar methods for modifying dendrimers are also described. A group which has been reacted by a chemoselective reaction may subsequently be reacted further. The chemoselective reaction may be an addition reaction, including a cycloaddn. reaction, or a reaction such as hydrogenation or hydrohalogenation, halogenation, hydrosilylation, or hydroboration followed by oxidation. The dendrimer may be luminescent, fluorescent, or phosphorescent. Dendrimers, including organometallic dendrimers, are also described. Organic **light-emitting** devices and photovoltaic devices are described which employ the dendrimers.

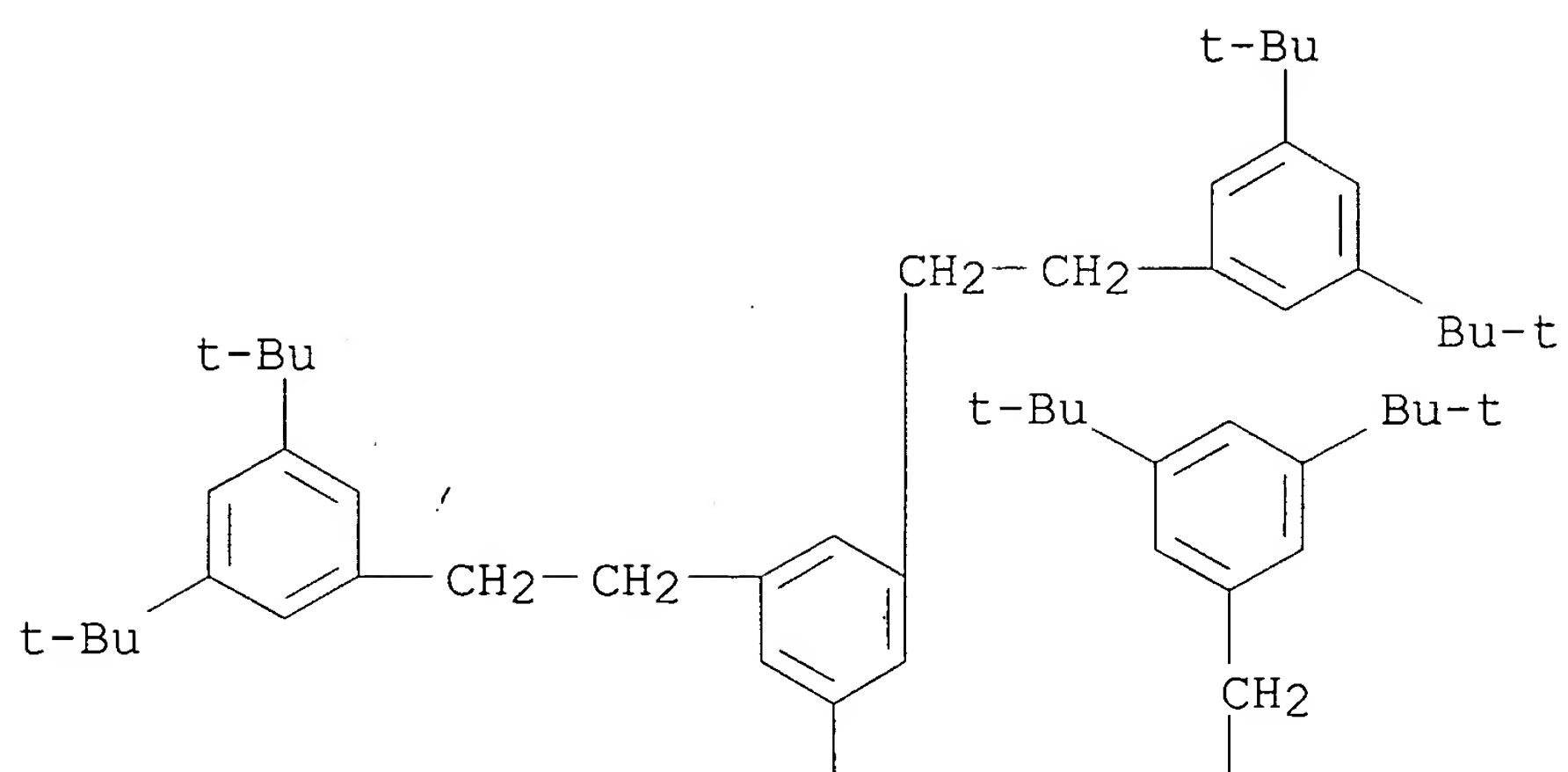
IT 670260-17-0P

(modification of reactive dendrimers and the dendrimers and their use)

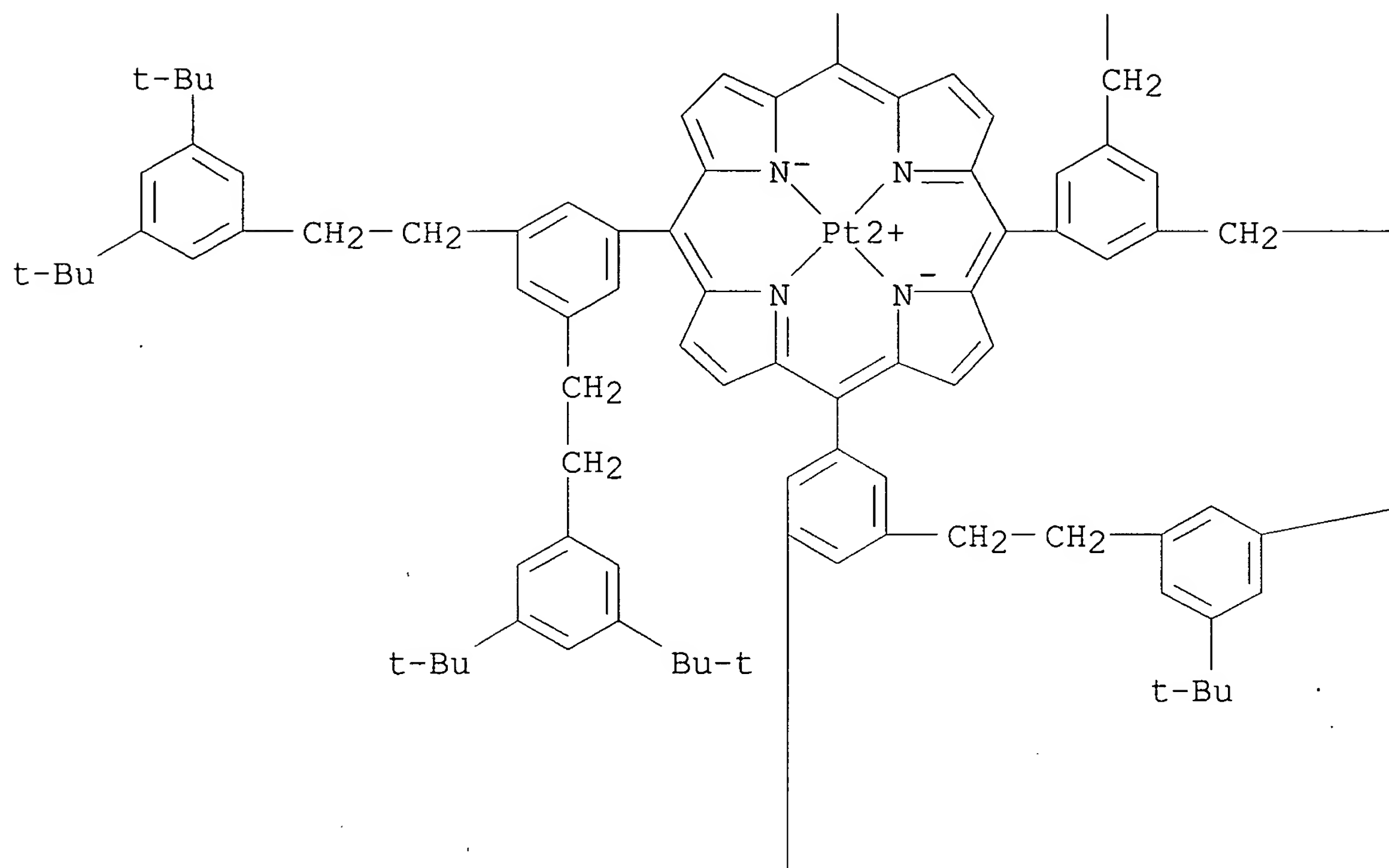
RN 670260-17-0 HCA

CN Platinum, [5,10,15,20-tetrakis[3,5-bis[2-[3,5-bis(1,1-dimethylethyl)phenyl]ethyl]phenyl]-21H,23H-porphinato(2-)- κ N21, κ N22, κ N23, κ N24]-, (SP-4-1)-(9CI) (CA INDEX NAME)

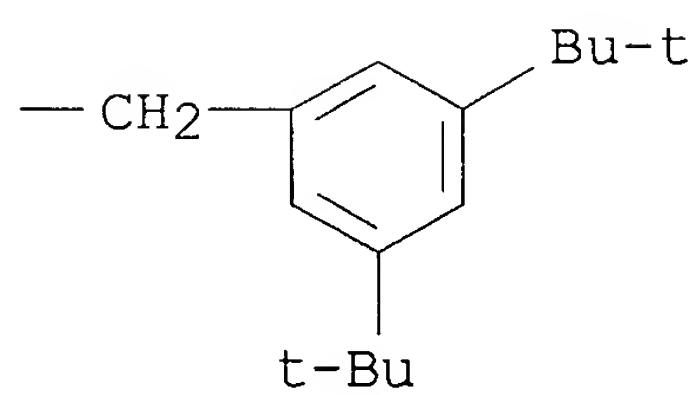
PAGE 1-A



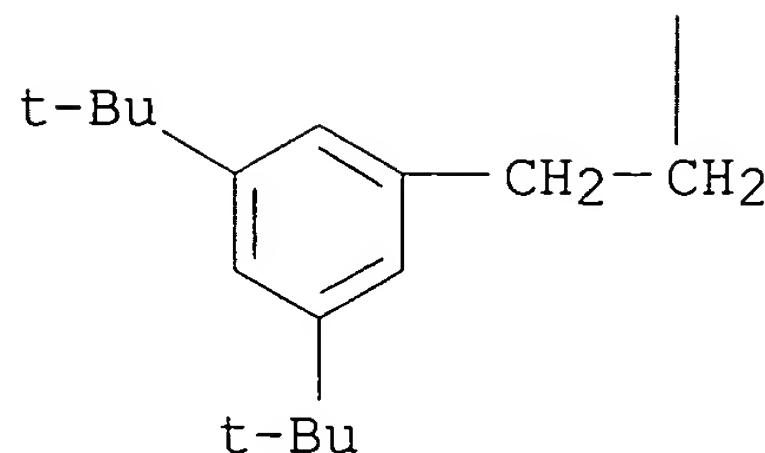
PAGE 2-A



PAGE 2-B



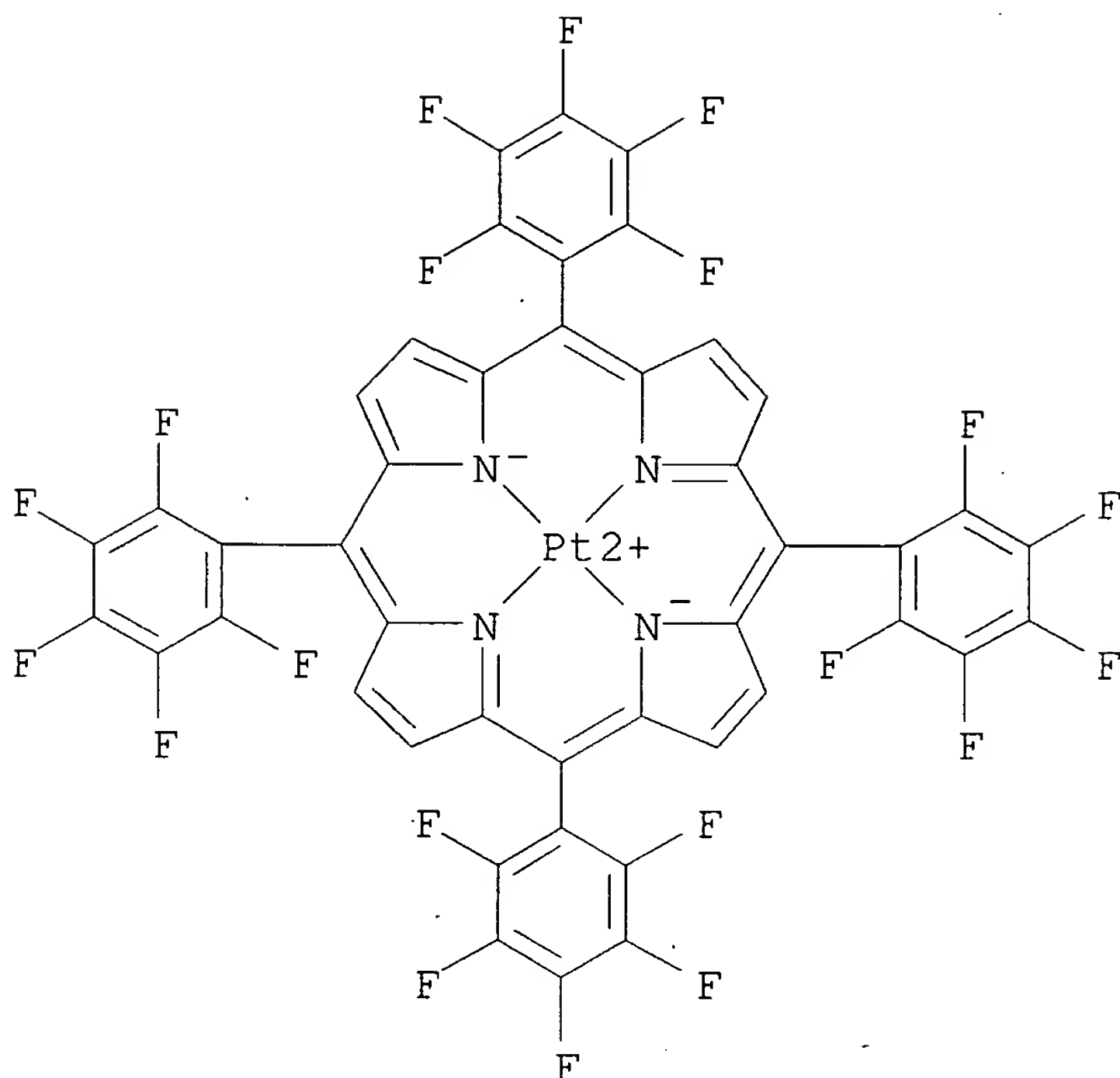
PAGE 3-A



IC ICM C09K011-06
 ICS H05B033-14; H01L051-20; H01L051-30; C08G083-00
 CC 35-4 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 52, 73, 76
 ST reactive dendrimer modification; org **light emitting** device reactive dendrimer; photovoltaic device
 reactive dendrimer; luminescent reactive dendrimer; fluorescent
 reactive dendrimer; phosphorescent reactive dendrimer
 IT Addition reaction
 Cycloaddition reaction
 Electroluminescent devices
 Fluorescent substances
 Halogenation
 Hydroboration
 Hydrogenation
 Hydrohalogenation
 Hydrosilylation
 Luminescent substances
 Phosphorescent substances
 Photoelectric devices
 (modification of reactive dendrimers and the dendrimers and their
 use)
 IT **670260-17-0P** 670260-18-1P 670274-51-8P
 (modification of reactive dendrimers and the dendrimers and their
 use)
 REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR
 THIS RECORD. ALL CITATIONS AVAILABLE IN
 THE RE FORMAT

L22 ANSWER 7 OF 24 HCA COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 139:343251 HCA
 TITLE: Efficient white and red light emission from
 GaN/tris-(8-hydroxyquinolato)
 aluminum/platinum(II) meso-
 tetrakis(pentafluorophenyl) porphyrin hybrid
light-emitting diodes
 AUTHOR(S): Xiang, Hai-Feng; Yu, Sze-Chit; Che, Chi-Ming;

Lai, P. T.
CORPORATE SOURCE: Department of Chemistry and the HKU-CAS Joint
Laboratory on New Materials, The University of
Hong Kong, Hong Kong SAR, Peop. Rep. China
SOURCE: Applied Physics Letters (2003), 83(8), 1518-1520
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Efficient white and red light emission is reported from GaN
(LED)/tris(8-hydroxyquinolino)aluminum (Alq3)/meso-
tetrakis(pentafluorophenyl)porphyrinatoplatinum(II) (PtF20TPP)
hybrid LEDs. Alq3 was used to enhance the efficiency of red and
white luminescence conversion (LC) LEDs through energy transfer from
Alq3 to PtF20TPP. In the white LC-LED, an intense, highly pure
white-light emission with CIE 1931 coordinates at $x = 0.32$ and $y =$
 0.31 is obtained. The LC-LEDs have relatively high efficiencies,
3.3% for white LC-LED and 4.0% for red LC-LED. The color temperature
(Tc), color rendering index (Ra), and luminous efficiency (η_L)
of the white LC-LED at 20 mA are 6800 K, 90.6, and 10 lm/W, resp.
IT 109781-47-7, meso-5,10,15,20-Tetrakis(pentafluorophenyl)porp
hyrinatoplatinum
(efficient white and red light emission from gallium
nitride/aluminum hydroxyquinolino complex hybrid LEDs with)
RN 109781-47-7 HCA
CN Platinum, [5,10,15,20-tetrakis(pentafluorophenyl)-21H,23H-
porphinato(2-)- $\kappa N21, \kappa N22, \kappa N23, \kappa N24$]-,
(SP-4-1)- (9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

IT **Electroluminescent** devices

(efficient white and red light emission from gallium nitride/aluminum hydroxyquinolinato complex/platinum tetrakis(pentafluorophenyl)porphyrinato complex hybrid LEDs)

IT **109781-47-7**, meso-5,10,15,20-Tetrakis(pentafluorophenyl)porphyrinatoplatinum

(efficient white and red light emission from gallium nitride/aluminum hydroxyquinolinato complex hybrid LEDs with)

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 8 OF 24 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 139:323547 HCA

TITLE: Preparation of cyclic compounds and the use thereof as **light absorbers**, **light emitters**, or complex ligands

INVENTOR(S): Koenemann, Martin; Gessner, Thomas; Sens, Ruediger; Lennartz, Christian; Seybold, Guenther

PATENT ASSIGNEE(S): Basf Aktiengesellschaft, Germany
 SOURCE: PCT Int. Appl., 75 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

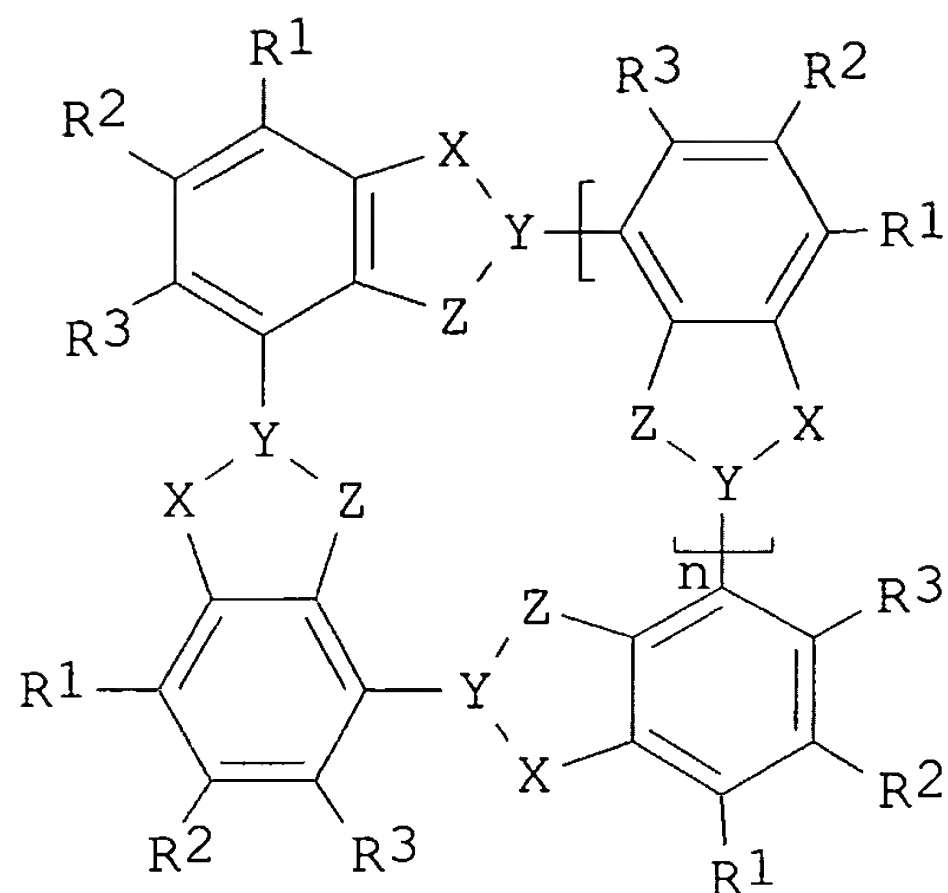
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|----------|
| WO 2003084960 | A1 | 20031016 | WO 2003-EP3538 | 20030404 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| DE 10214937 | A1 | 20031016 | DE 2002-10214937 | 20020404 |

PRIORITY APPLN. INFO.:

DE 2002-10214937 A

20020404

OTHER SOURCE(S): CASREACT 139:323547; MARPAT 139:323547
 GI



I

AB Disclosed is the use of cyclic compds. I [$n = 1 - 7$; X-Y-Z independently represent O-C:N, N:C-O, NR₅-C:N, N:C-NR₅, N⁺(R₅)₂-C:N, N:C-N⁺(R₅)₂, O-C:N+R₅, N+R₅:C-O, S-C:N+R₅, N+R₅:C-S, S-C:N, N:C-S; R₁, R₂, R₃ = H, C1-12-alkyl, C1-12-alkanoyl, C3-12-cycloalkyl, C6-12-aryl, , C7-13-aralkyl, C7-13-alkaryl, C1-12-alkoxy, C6-12-aryloxy, C1-12-hydroxyalkyl, heterocycle, C6-12-aroyl; R₁R₂, R₂R₃ = 1 - 3-membered carbocycle or heterocycle; R₅ = H, (un)substituted C1-12-alkyl, C6-12-aryl, C7-13-alkylaryl, C1-12-alkanoyl, C7-13-aroyl, oligoethylene glycol or ether (with 1 - 6 oxygens), imidazolylmethyl, etc.; R₇ = H, C1-12-alkyl, C6-12-aryl], tautomers, or metal complexes of the cyclic compds. or complexes of the cyclic compds. comprising mineral acids, X⁻ (X = chloride, sulfate, hydrogen sulfate, phosphate, hydrogen phosphate, nitrate, BF₄⁻, methanesulfonate) being supplied as counterions in cationic cycles, as light absorbers, materials for hole-injection layers in OLEDs, **light-emitting** compds. in OLED, phase transfer catalysts, synergists for dispersing pigments or for optical data storage. Also disclosed is a procedure for the preparation

of I via cyclization of benzene derivs. II (R₄ = CO₂H; $n = 1, 2$; X = N; Z = N, O; whereby the OH group as the alkali metal or ammonium salt and/or the NH₂ group either protonated or as NO, NO₂, N:N-aryl, :NOH, :NH) is cyclized in the presence of a metal salt or powder. Thus, cyclo-2,4':2'7'':2'',4''':2''',7-quaterbenzimidazole (I; XYZ = NHC:N, R₁ - R₃ = H, $n = 1$) was prepared from ammonium 2,3-diaminobenzoate by heating to 100° in the presence of 85% polyphosphoric acid.

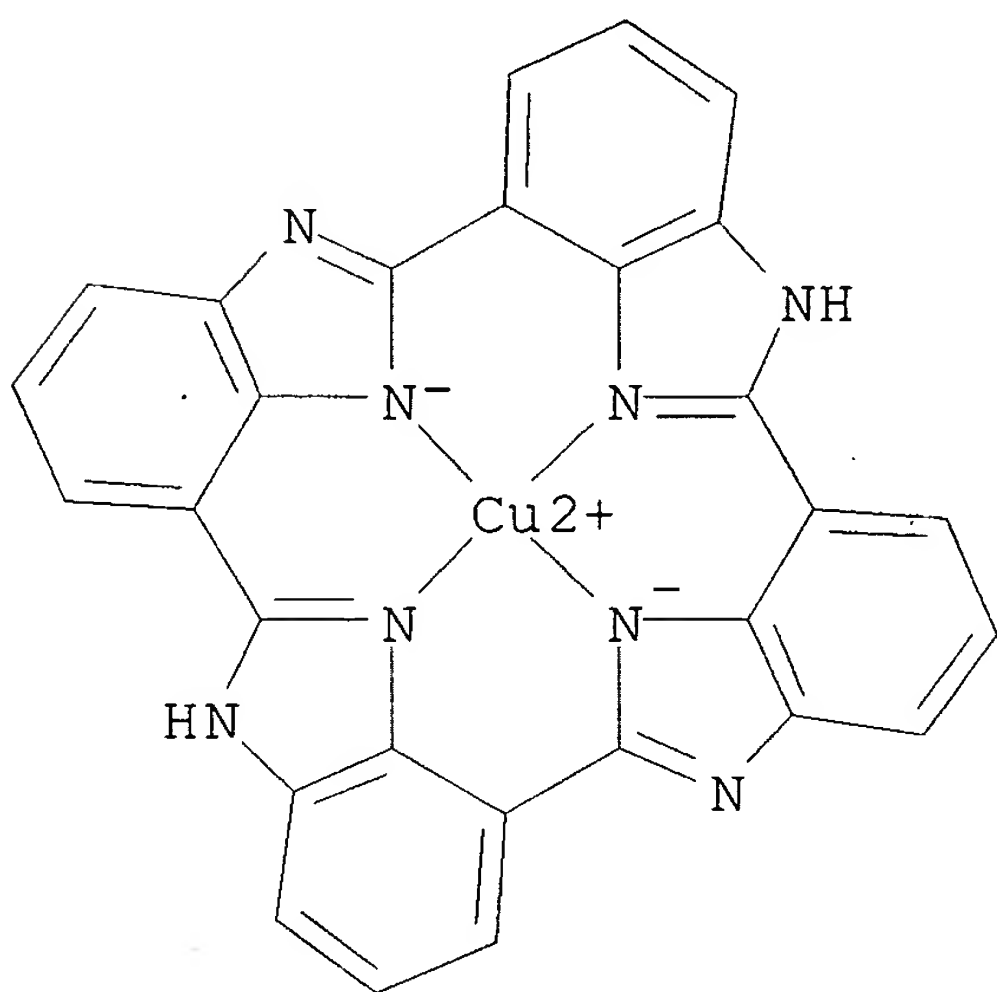
IT 27199-20-8P 613263-87-9P 613263-89-1P
613263-90-4P

(preparation and use of, in OLED's; preparation of cyclic compds.
for use

as light absorbers, light emitters,
or complex ligands)

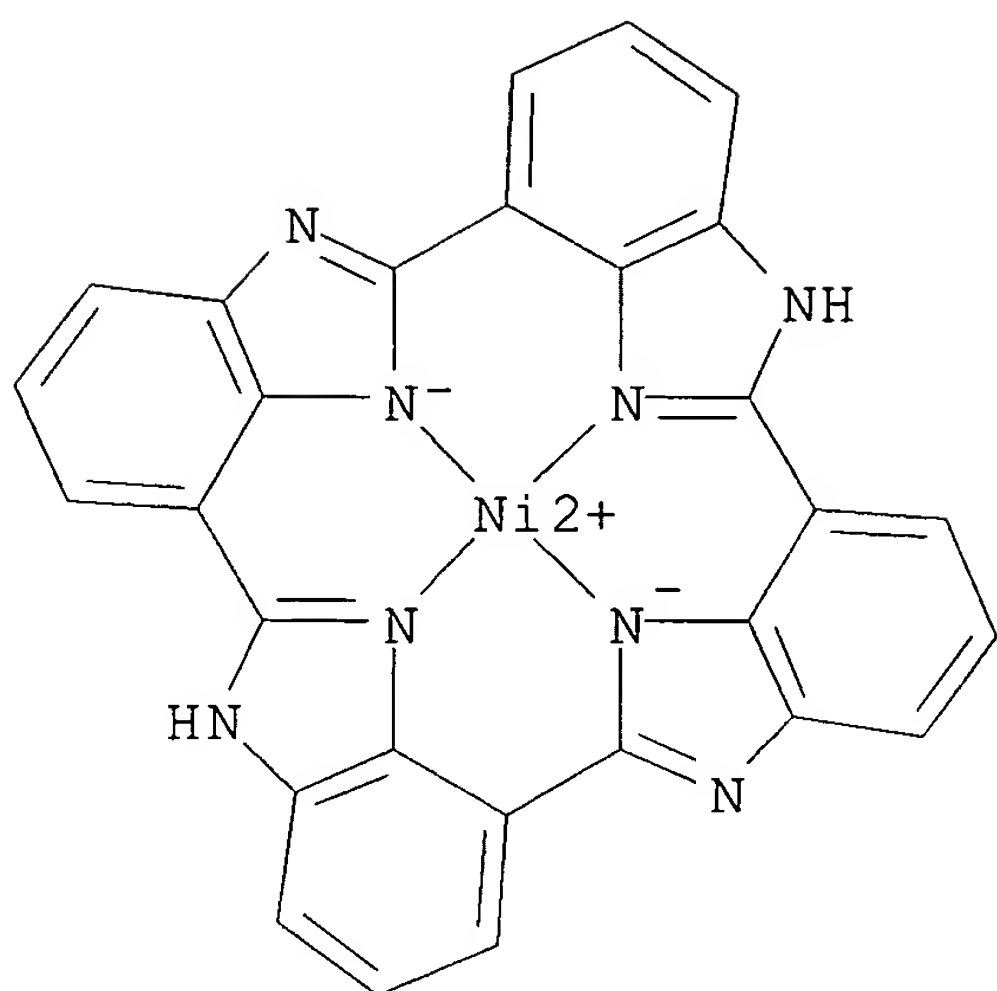
RN 27199-20-8 HCA

CN Copper, [11H,23H-4,6:16,18-diimino-10,12:22,24-
dinitrilotetrabenzo[b,f,j,n][1,5,9,13]tetraazacyclohexadecinato(2-)-
 $\kappa N5, \kappa N11, \kappa N17, \kappa N23$]-, (SP-4-1)-(9CI) (CA
INDEX NAME)

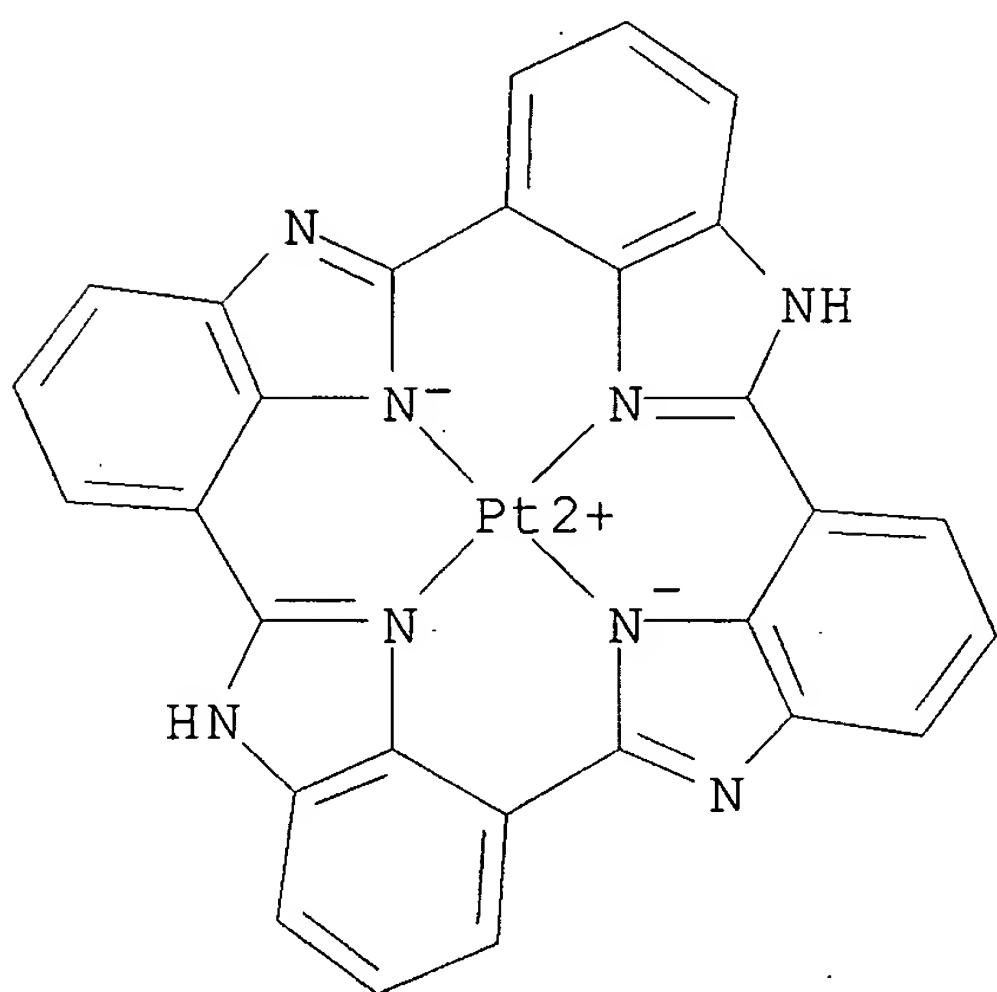


RN 613263-87-9 HCA

CN Nickel, [11H,23H-4,6:16,18-diimino-10,12:22,24-
dinitrilotetrabenzo[b,f,j,n][1,5,9,13]tetraazacyclohexadecinato(2-)-
 $\kappa N5, \kappa N11, \kappa N17, \kappa N23$]-, (SP-4-1)-(9CI) (CA
INDEX NAME)

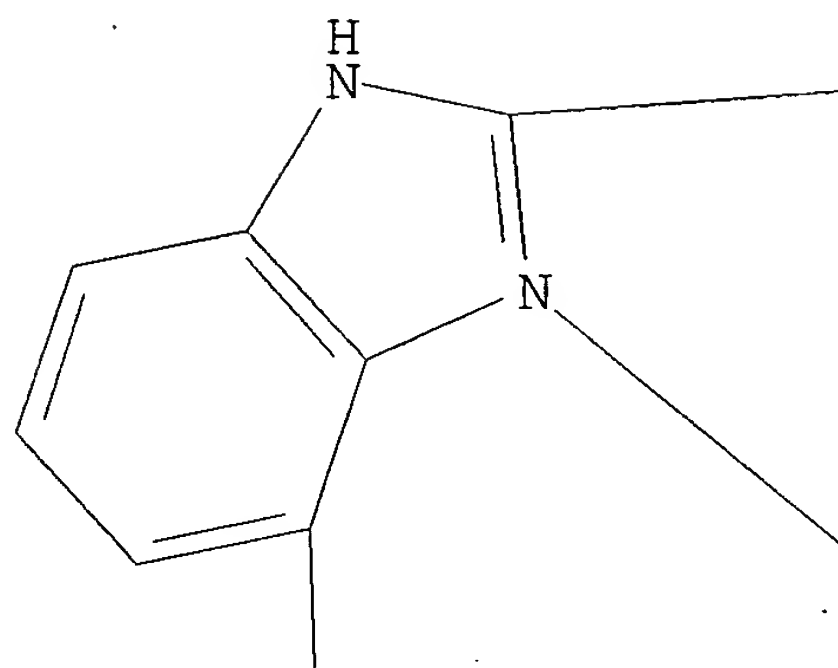


RN 613263-89-1 HCA
 CN Platinum, [11H,23H-4,6:16,18-diimino-10,12:22,24-dinitrilotetrabenzo[b,f,j,n][1,5,9,13]tetraazacyclohexadecinato(2-)-κN5,κN11,κN17,κN23]-, (SP-4-1)- (9CI) (CA INDEX NAME)

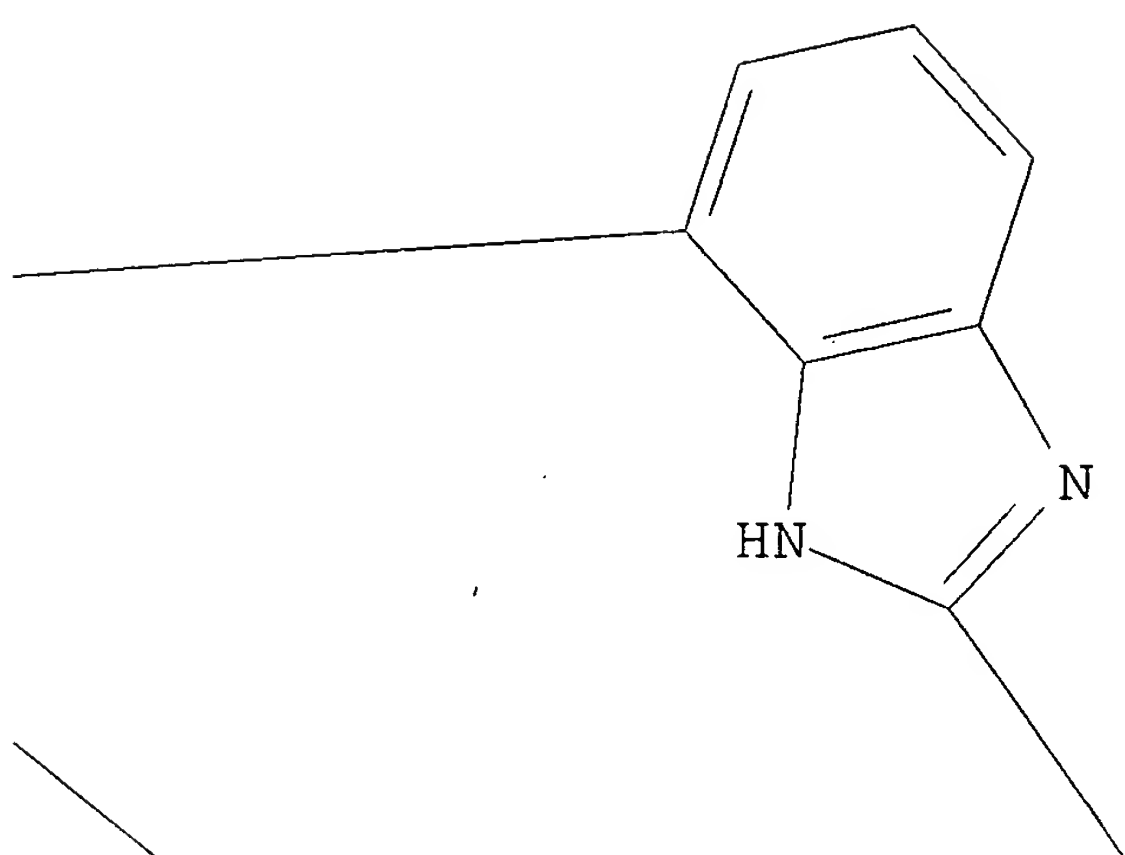


RN 613263-90-4 HCA
 CN Platinum, [4,6:10,12:16,18:22,24:28,30-pentaiminopentabenzo[b,f,j,n,r][1,5,9,13,17]pentaazacycloeicosinato(2-)-κN5,κN11,κN17,κN31]-, (SP-4-2)- (9CI) (CA INDEX NAME)

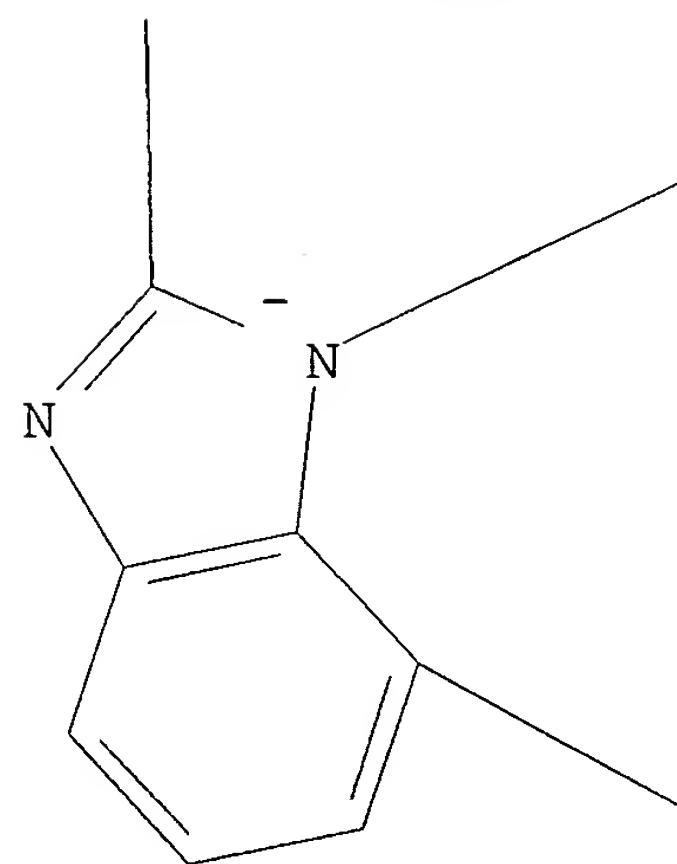
PAGE 1-A



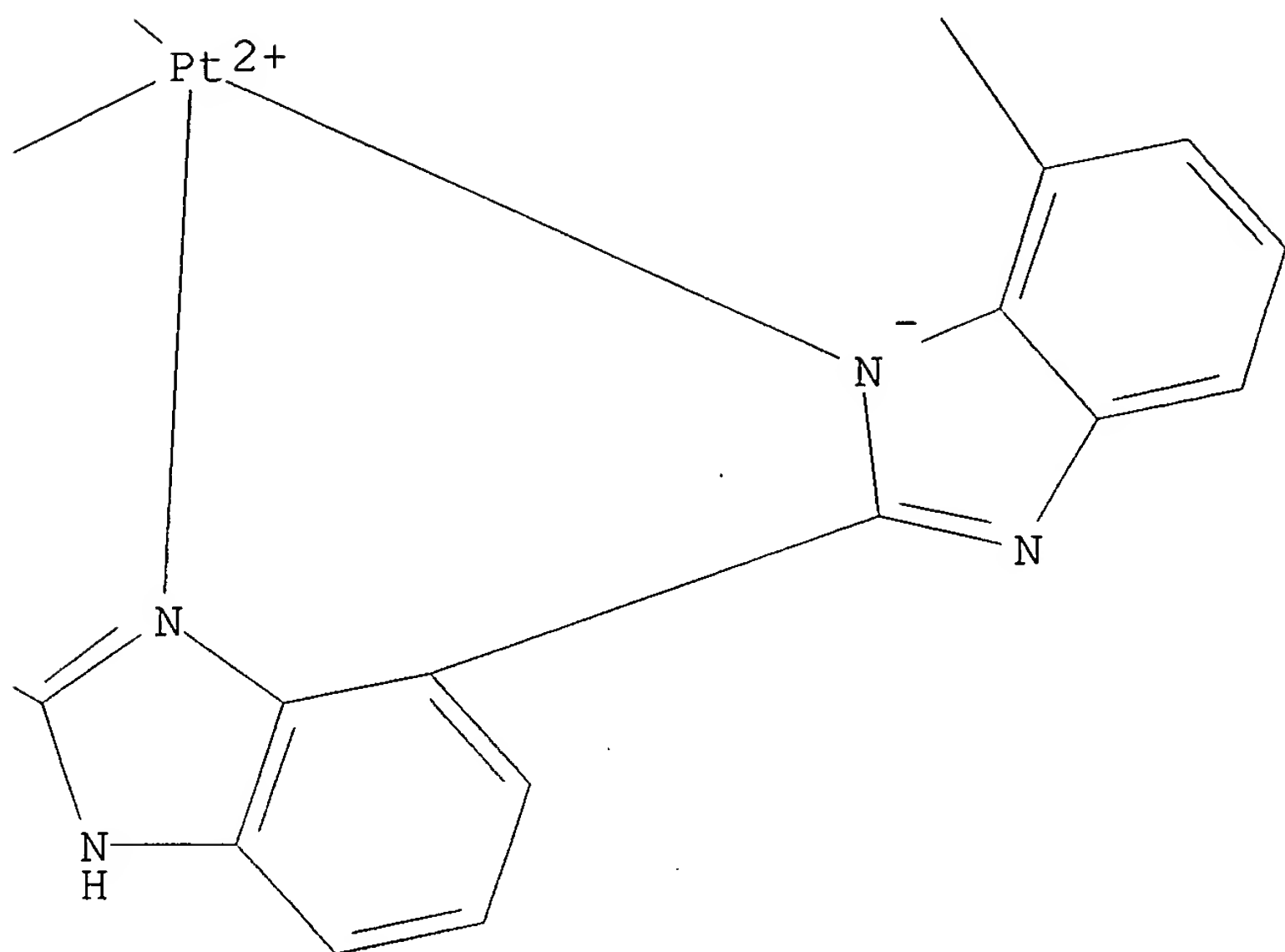
PAGE 1-B



PAGE 2-A



PAGE 2-B



- IC ICM C07D487-22
ICS C07D498-22; C07D513-22; H01L051-30; B01J031-02; C09B067-00;
A61K007-40; C07D257-00; C07D235-00; C07D259-00
- CC 28-23 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 29, 62, 67, 73, 78
- ST cyclic compd complex ligand prepn **light** absorber
emitter; dispersing pigment cyclic compd synergist prepn;
OLED **light emitter** cyclic compd prepn; hole
injection layer OLED cyclic compd prepn; phase transfer catalyst aza
crown ether prepn; optical data storage cyclic compd prepn
- IT **Electroluminescent** devices
(OLED's, hole-injection layers or **light-emitting** compds. in; preparation of cyclic compds. for use as
light absorbers, **light emitters**, or
complex ligands)
- IT Phenols, reactions
(amino, carboxylated, cyclocondensation of, azacrown ethers from;
preparation of cyclic compds. for use as **light** absorbers,
light emitters, or complex ligands)
- IT Organometallic compounds
(azacrown ether complexes; preparation of cyclic compds. for use as
light absorbers, **light emitters**, or
complex ligands)
- IT Pigments, nonbiological
(azacrown ether synergists for dispersion; preparation of cyclic
compds. for use as **light** absorbers, **light**

- emitters**, or complex ligands)
- IT Light sources
Optical recording
Phase transfer catalysts
(azacrown ethers; preparation of cyclic compds. for use as **light absorbers**, **light emitters**, or complex ligands)
- IT Optical absorption
(by azacrown ethers; preparation of cyclic compds. for use as **light absorbers**, **light emitters**, or complex ligands)
- IT Lacquers
Laminated materials
(containing light absorbing cyclic compds.; preparation of cyclic compds. for use as **light absorbers**, **light emitters**, or complex ligands)
- IT Salts, uses
(cyclization catalysts; preparation of cyclic compds. for use as **light absorbers**, **light emitters**, or complex ligands)
- IT Cyclization
for (of hydroxy- and aminobenzoates in; preparation of cyclic compds. for use as **light absorbers**, **light emitters**, or complex ligands)
- IT Amines, reactions
(phenolic, carboxylated, cyclocondensation of, azacrown ethers from; preparation of cyclic compds. for use as **light absorbers**, **light emitters**, or complex ligands)
- IT Metals, uses
use (powders, cyclization catalysts; preparation of cyclic compds. for use as **light absorbers**, **light emitters**, or complex ligands)
- IT Azacrown ethers
Cyclic compounds
(preparation of cyclic compds. for use as **light absorbers**, **light emitters**, or complex ligands)
- IT Cooperative phenomena
of (synergism, of azacrown ether for dispersing pigments; preparation of cyclic compds. for use as **light absorbers**, **light emitters**, or complex ligands)
- IT Chelation
preparation (template, in cyclization of hydroxy- and aminobenzoates;

- of cyclic compds. for use as **light absorbers, light emitters**, or complex ligands)
- IT Plastics, uses
(thermoplastics, containing light absorbing cyclic compds.; preparation of cyclic compds. for use as **light absorbers, light emitters**, or complex ligands)
- IT 95-84-1, 2-Amino-4-methylphenol
(N-acetylation of; preparation of cyclic compds. for use as **light absorbers, light emitters**, or complex ligands)
- IT 5959-52-4, 3-Amino-2-naphthoic acid
(amination of, with sulfobenzenediazonium salt; preparation of cyclic compds. for use as **light absorbers, light emitters**, or complex ligands)
- IT 1779-11-9P, 7-Bromo-3-hydroxy-2-naphthoic acid
(amination of, with sulfobenzenediazonium salt; preparation of cyclic compds. for use as **light absorbers, light emitters**, or complex ligands)
- IT 105-60-2, Caprolactam, reactions 288-32-4, Imidazole, reactions
15438-71-8, N-(Hydroxymethyl)pyrrolidin-2-one 612806-14-1,
N-(Hydroxymethyl)-5-(tert-Butyl)caprolactam
(aminomethylation by, of cycloquaternaphtho[1,2-d]oxazole; preparation of cyclic compds. for use as **light absorbers, light emitters**, or complex ligands)
- IT 140-66-9, 4-(tert-Octyl)phenol
(carboxylation of; preparation of cyclic compds. for use as **light absorbers, light emitters**, or complex ligands)
- IT 616-47-7, N-Methylimidazole
(condensation of, with paraformaldehyde and cycloquaternaphtho[1,2-d]oxazole; preparation of cyclic compds. for use as **light absorbers, light emitters**, or complex ligands)
- IT 548-93-6, 3-Hydroxyanthranilic acid 94840-46-7
(cyclocondensation of; preparation of cyclic compds. for use as **light absorbers, light emitters**, or complex ligands)
- IT 121-57-3, Sulfanilic acid
(diazotization and reaction of, with naphthalenecarboxylic acid derivs.; preparation of cyclic compds. for use as **light absorbers, light emitters**, or complex ligands)
- IT 33955-43-0
(pigment dispersion with cycloquaternaphtho[1,2-d]oxazole; preparation

of cyclic compds. for use as **light absorbers, light emitters, or complex ligands)**

IT 612806-10-7P, Methyl 3-nitro-5-(tert-octyl)salicylate
(preparation and amidation of; preparation of cyclic compds. for use as **light absorbers, light emitters, or complex ligands)**)

IT 6375-17-3P
(preparation and caboxylation of; preparation of cyclic compds. for use as **light absorbers, light emitters, or complex ligands)**)

IT 13065-86-6P 612806-03-8P, 4-Amino-7-bromo-3-hydroxy-2-naphthoic acid 612806-05-0P, Bis(2-amino-3-carboxyphenylammonium) hydrogen phosphate 612806-09-4P, 3-Amino-5-methylsalicyclic acid disodium salt 612806-12-9P, 3-Amino-5-(tert-octyl)salicylamide 612806-13-0P, 3,4-Diamino-2-naphthoic acid
(preparation and cyclocondensation of; preparation of cyclic compds. for use as **light absorbers, light emitters, or complex ligands)**)

IT 16094-35-2, 5-(tert-Octyl)salicylic acid
(preparation and esterification of; preparation of cyclic compds. for use as **light absorbers, light emitters, or complex ligands)**)

IT 50869-10-8P, 5-(tert-Octyl)salicylic acid methyl ester
(preparation and nitration of; preparation of cyclic compds. for use as **light absorbers, light emitters, or complex ligands)**)

IT 612806-11-8P, 3-Nitro-5-(tert-octyl)salicylamide
(preparation and reduction of; preparation of cyclic compds. for use as **light absorbers, light emitters, or complex ligands)**)

IT 612806-08-3P, 2-Carboxy-4-methylbenzoxazolidinone
(preparation and saponification of; preparation of cyclic compds. for use as **light absorbers, light emitters, or complex ligands)**)

IT 27199-20-8P 467231-63-6P 612805-99-9P 612806-00-5P
612806-01-6P 612806-02-7P 612806-04-9P 612806-07-2P
612838-52-5P 613263-87-9P 613263-88-0P
613263-89-1P 613263-90-4P 613680-00-5P
613680-01-6P 613680-02-7DP, 1.3 degree of substitution
613680-03-8DP, 8.2 degree of substitution 613680-04-9P
613680-05-0P 613680-06-1P 613680-07-2DP, homologs

- 613680-08-3DP, homologs 613680-09-4P 613680-10-7P 613680-11-8P
613680-12-9P 615286-74-3P 615286-83-4P, Cycloquaterbenzoxazole
(preparation and use of, in OLED's; preparation of cyclic compds.
for use
as **light absorbers, light emitters,**
or complex ligands)
- IT 612806-06-1P, N-Acetyl-2-carboxy-4-methylbenzoxazolidinone
(preparation of cyclic compds. for use as **light absorbers,**
light emitters, or complex ligands)
- IT 8007-56-5, Nitrohydrochloric acid
(preparation of cyclic compds. for use as **light absorbers,**
light emitters, or complex ligands)
- IT 614716-42-6P, Cyclo-2,9':2',9'':2'',9''':2''',9-quaternaphtho[1,2-
d]oxazole
(preparation, chlorination, sulfonation or aminomethylation and use
of, in OLED's; preparation of cyclic compds. for use as **light**
absorbers, light emitters, or complex
ligands)
- IT 612805-98-8P
(preparation, metalation and use of, in OLED's; preparation of
cyclic
compds. for use as **light absorbers, light**
emitters, or complex ligands)
- IT 25797-72-2P, Cyclo-2,4':2',7'':2'',4''':2''',7-quaterbenzimidazole
(preparation, methylation or metalation and use of, in OLED's;
preparation
of cyclic compds. for use as **light absorbers,**
light emitters, or complex ligands)
- IT 5281-04-9
(reductive bond cleavage of; preparation of cyclic compds. for use
as
light absorbers, light emitters, or
complex ligands)
- IT 467231-64-7, Ammonium 2,3-diaminobenzoate
(salt transfer or cyclocondensation of; preparation of cyclic
compds.
for use as **light absorbers, light**
emitters, or complex ligands)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

L22 ANSWER 9 OF 24 HCA COPYRIGHT 2004 ACS on STN

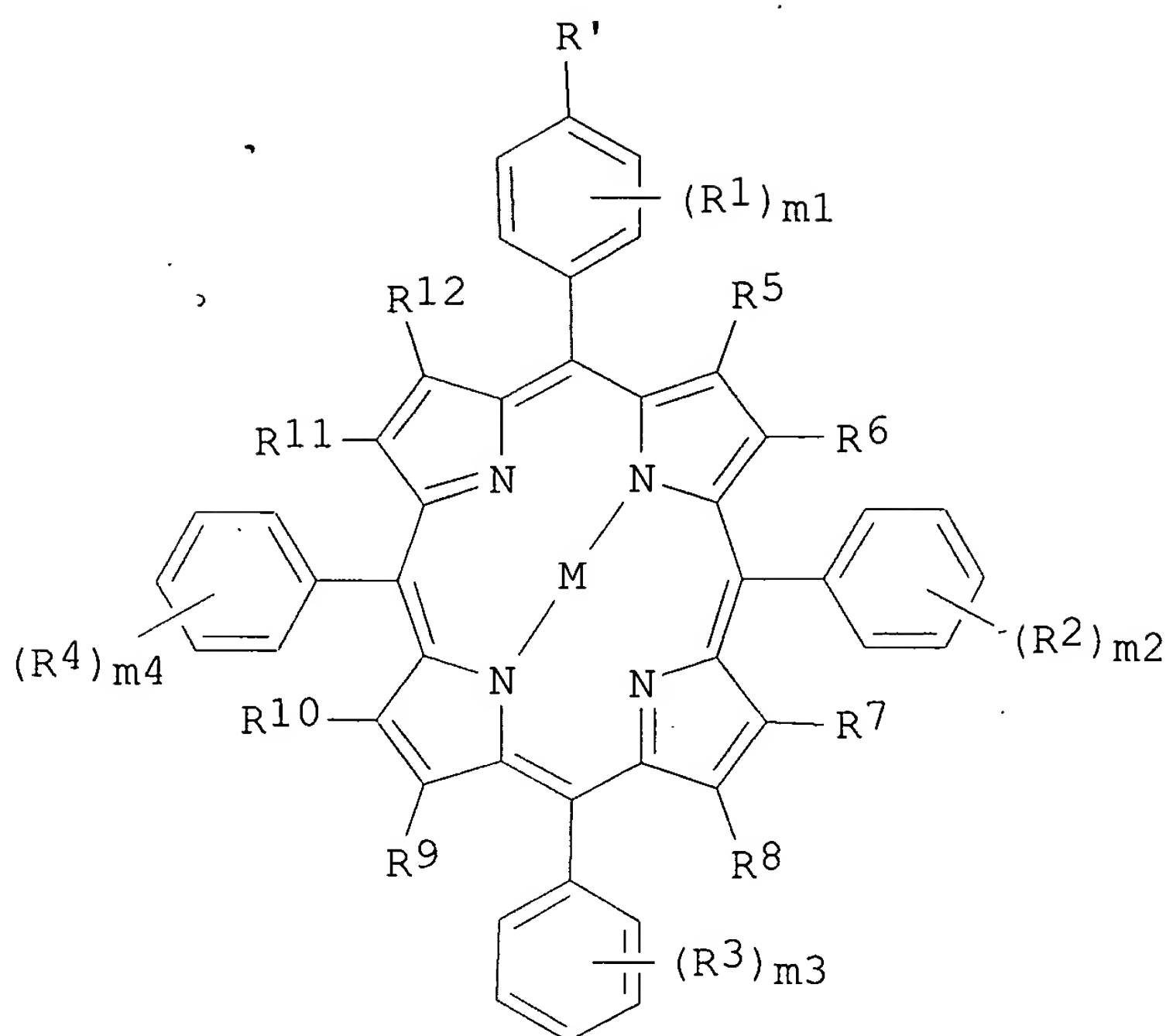
ACCESSION NUMBER: 139:323377 HCA

TITLE: Substituted porphyrin compounds, preparation of
their molecular assemblies, and applications of
the assemblies

INVENTOR(S): Yokoyama, Shizuyoshi; Uejo, Toshiya; Masuko,

PATENT ASSIGNEE(S): Nobuo; Yokoyama, Takashi
Tsushin Sogo Kenkyusho, Japan; National
Institute for Research In Inorganic Materials
SOURCE: Jpn. Kokai Tokkyo Koho, 26 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|-------------------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| JP 2003300983 | A2 | 20031021 | JP 2002-106940 | 200204 09 |
| PRIORITY APPLN. INFO.: | | | JP 2002-106940 | 200204 09 |
| OTHER SOURCE(S): | | MARPAT 139:323377 | | |
| GI | | | | |



I

AB The compds. are represented by I [M = 2H, divalent metal, trivalent metal derivs., tetravalent metal derivs.; R' = C2-12 alkenyl(oxy), C3-6 dienyl, C2-12 alkynyl(oxy), OH, C1-12 alkoxy, carbamoyl, NH₂, cyano, NO₂, C1-12 alkylsulfonyl, alkoxyaminocarbonyl, halo, etc.; R1-R4 = H, C1-12 (halo)alkyl, C2-12 alkenyl, C2-30 alkenyloxy, C3-6 dienyl, C2-12 alkynyl, OH, arylamino, sulfamoyl, etc.; m1 = 1-4; m2-m4 = 1-5; R5-R12 = H, halo, amino, OH, NO₂, cyano, (un)substituted C1-3 alkyl]. Mol. assemblies of I or other porphyrin compds. (Markush structure are given) are prepared by depositing the porphyrin compds. on a metal thin film formed on a solid surface. Also claimed are mol. assemblies comprising regularly-arranged unit assemblies containing 3 or 4 mols. of the porphyrin compds. per unit or linearly arranged mol. assemblies of the porphyrin compds. Catalysts, recording media, electrophotog. photoreceptors, and organic electroluminescent devices using the porphyrin compds. or their mol. assemblies are also claimed.

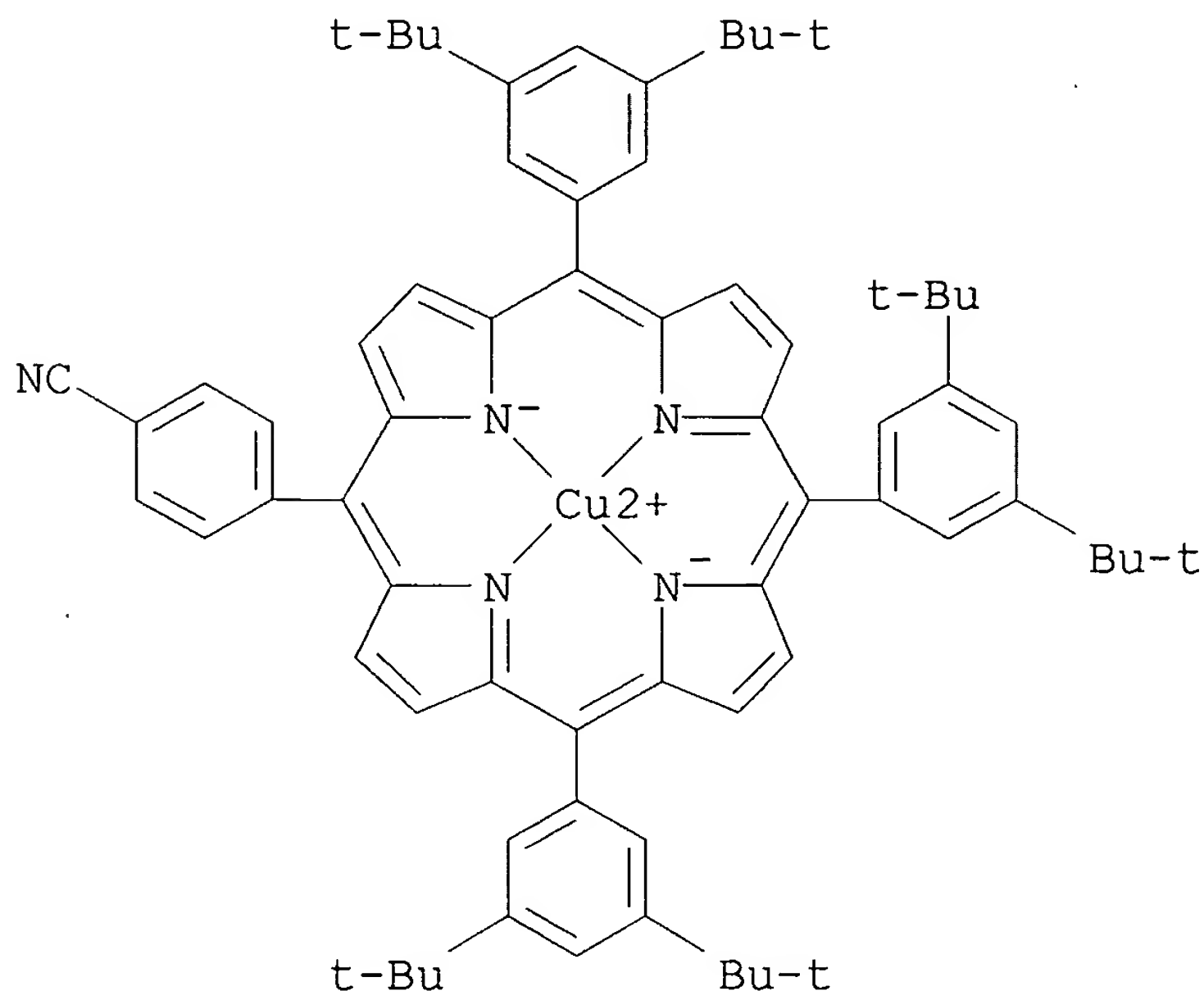
IT **614757-53-8P**

(preparation of substituted porphyrin compds. and their mol. assemblies for catalysts, recording media, electrophotog. photoreceptors, and organic EL devices)

RN 614757-53-8 HCA

CN Copper, [4-[10,15,20-tris[3,5-bis(1,1-dimethylethyl)phenyl]-21H,23H-

porphin-5-yl-κN21,κN22,κN23,κN24]benzonitril
ato(2-)]-, (SP-4-2)- (9CI) (CA INDEX NAME)



IC ICM C07D487-22
ICS B41M005-26; C07F001-08; C09K011-06; H05B033-14; H05B033-22
CC 26-7 (Biomolecules and Their Synthetic Analogs)
Section cross-reference(s): 66, 67, 74, 78

IT 124856-09-3P 124856-10-6P 226083-66-5P 227287-28-7P
290823-80-2P 305344-45-0P 354566-46-4P 476313-43-6P
614752-71-5P 614752-72-6P 614752-73-7P 614752-74-8P
614752-75-9P 614752-76-0P 614752-77-1P 614752-78-2P
614757-53-8P

(preparation of substituted porphyrin compds. and their mol.
assemblies for catalysts, recording media, electrophotog.
photoreceptors, and organic EL devices)

L22 ANSWER 10 OF 24 HCA COPYRIGHT 2004 ACS on STN

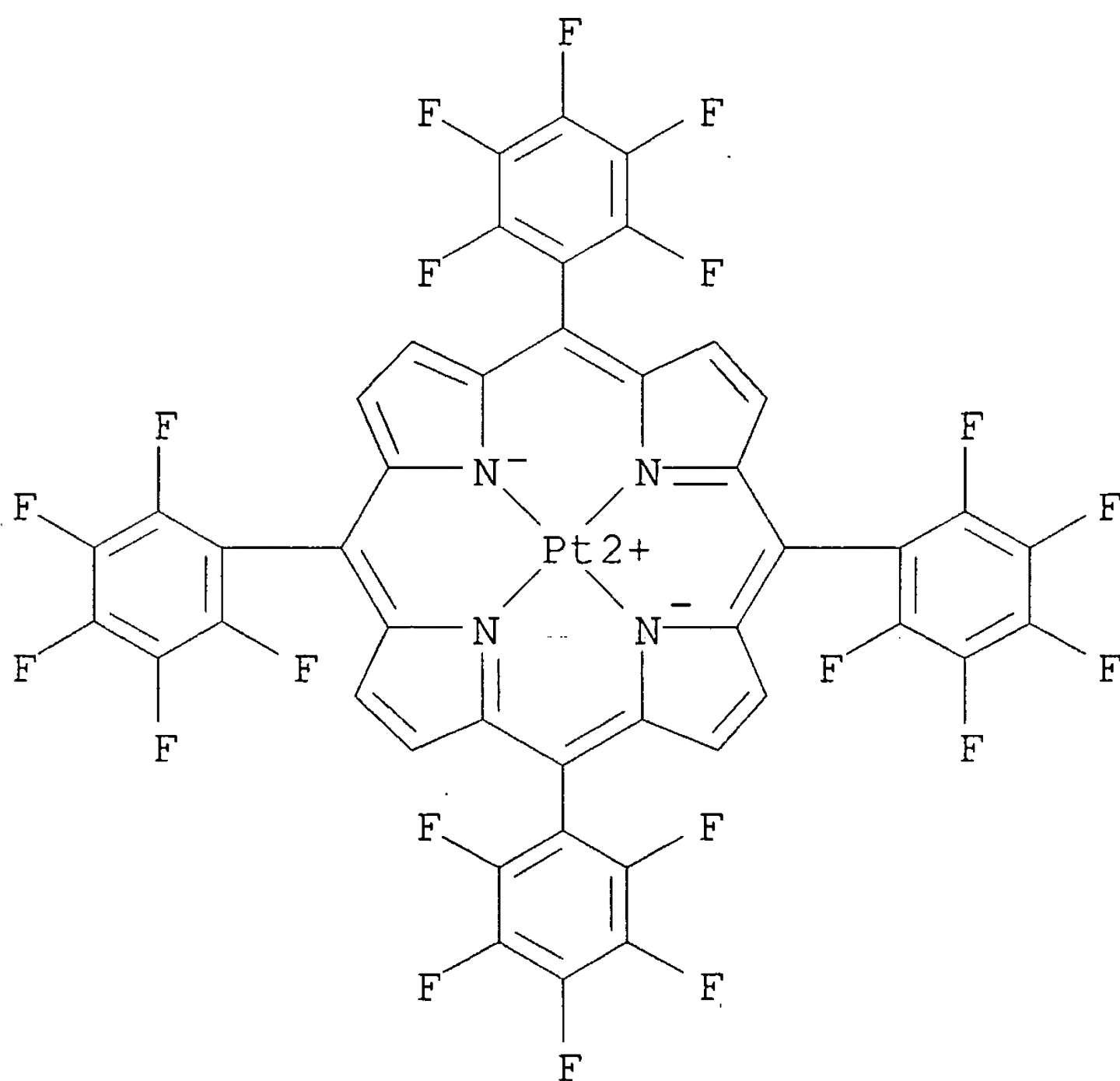
ACCESSION NUMBER: 139:187581 HCA

TITLE: [meso-Tetrakis(pentafluorophenyl)porphyrinato]pl
atinum(ii) as an efficient, oxidation-resistant
red phosphor: spectroscopic properties and
applications in organic **light-**
emitting diodes

AUTHOR(S): Che, Chi-Ming; Hou, Yuan-Jun; Chan, Michael C.
W.; Guo, Jianhua; Liu, Yu; Wang, Yue

CORPORATE SOURCE: Department of Chemistry and HKU-CAS Joint
Laboratory on New Materials, The University of

SOURCE: Hong Kong, Hong Kong SAR, Peop. Rep. China
Journal of Materials Chemistry (2003), 13(6),
1362-1366
CODEN: JMACEP; ISSN: 0959-9428
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB [Meso-Tetrakis(pentafluorophenyl)porphyrinato]platinum(ii)
(PtF20TPP) exhibits strong red phosphorescence and high stability
with respect to oxidative degradation OLEDs affording efficient
saturated
red emission have been fabricated using the PtF20TPP dopant.
IT 109781-47-7
(spectroscopic properties and applications in organic light
-emitting diodes of [meso-Tetrakis(pentafluorophenyl)po
rphyrinato]platinum(ii) as efficient, oxidation-resistant red
phosphor)
RN 109781-47-7 HCA
CN Platinum, [5,10,15,20-tetrakis(pentafluorophenyl)-21H,23H-
porphinato(2-)-κN21,κN22,κN23,κN24]-,
(SP-4-1)- (9CI) (CA INDEX NAME)

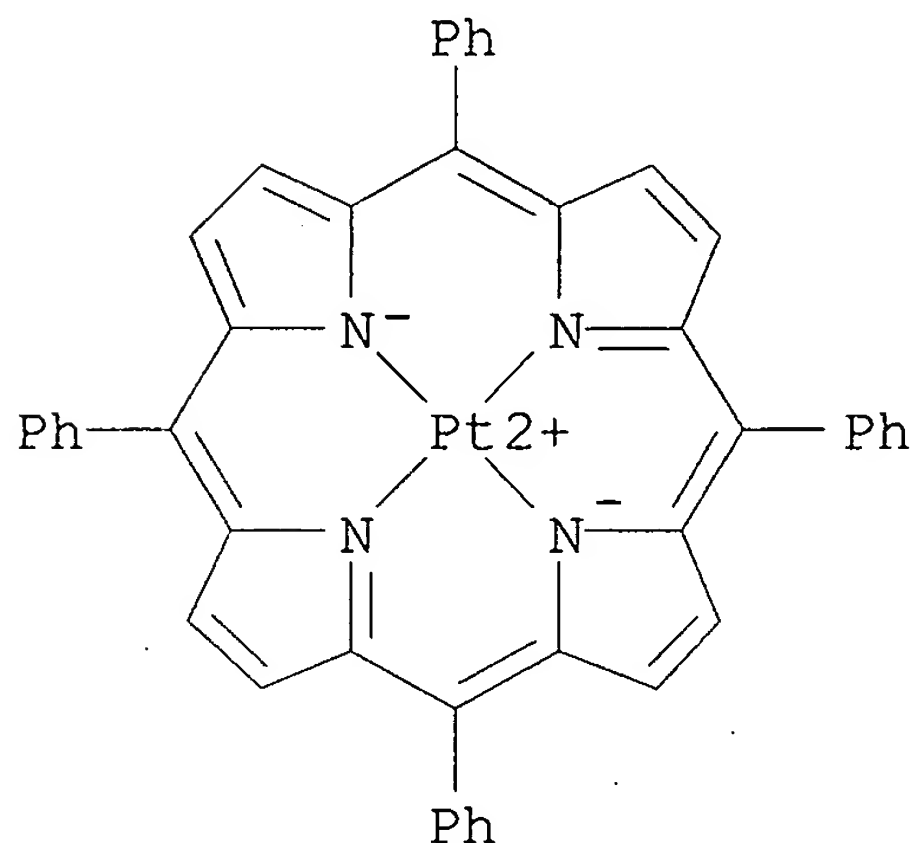


IT 14187-14-5
(spectroscopic properties and applications in organic light

-emitting diodes of [meso-Tetrakis(pentafluorophenyl)porphyrinato]platinum(ii) as efficient, oxidation-resistant red phosphor)

RN 14187-14-5 HCA

CN Platinum, [5,10,15,20-tetraphenyl-21H,23H-porphinato(2-)-
κN21,κN22,κN23,κN24]-, (SP-4-1)-(9CI) (CA
INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 78

ST tetrakis pentafluorophenyl porphyrinato platinum red phosphor
phosphorescence **electroluminescent** device

IT Doping
(effect of PtF20TPP doping concentration; spectroscopic properties
and

applications in organic **light-emitting** diodes of
[meso-Tetrakis(pentafluorophenyl)porphyrinato]platinum(ii) as
efficient, oxidation-resistant red phosphor)

IT Phosphors
(**electroluminescent**; spectroscopic properties and
applications in organic **light-emitting** diodes of
[meso-Tetrakis(pentafluorophenyl)porphyrinato]platinum(ii) as
efficient, oxidation-resistant red phosphor)

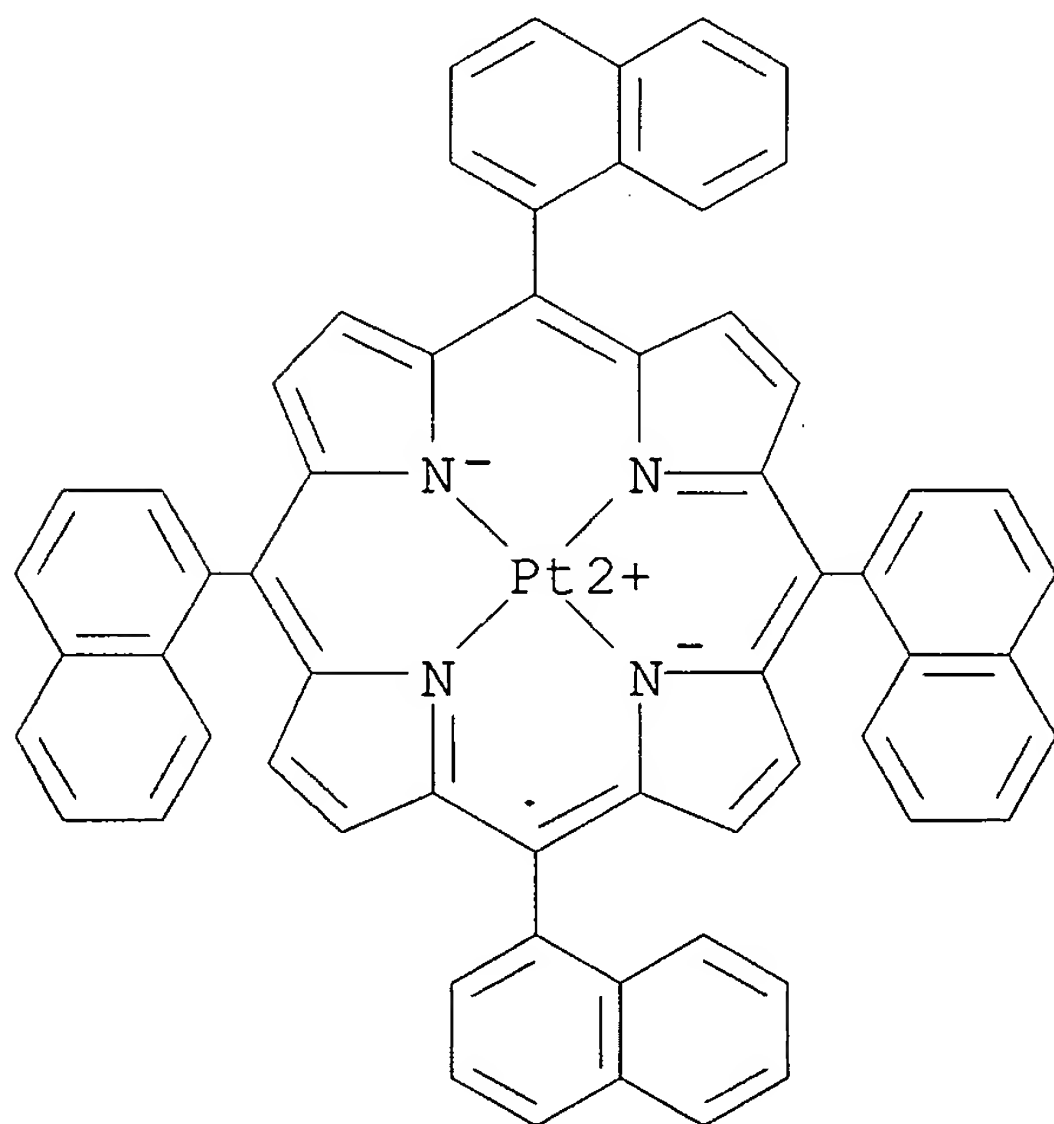
IT **Electroluminescent** devices
(red-emitting, electro-phosphorescent; spectroscopic properties
and applications in organic **light-emitting**
diodes of [meso-Tetrakis(pentafluorophenyl)porphyrinato]platinum(
ii) as efficient, oxidation-resistant red phosphor)

IT Phosphors
(red-emitting; spectroscopic properties and applications in organic
light-emitting diodes of [meso-

- Tetrakis(pentafluorophenyl)porphyrinato]platinum(ii) as efficient, oxidation-resistant red phosphor)
- IT Phosphorescence
(red; spectroscopic properties and applications in organic **light-emitting** diodes of [meso-Tetrakis(pentafluorophenyl)porphyrinato]platinum(ii) as efficient, oxidation-resistant red phosphor)
- IT Electric current-potential relationship
(spectroscopic properties and applications in organic **light-emitting** diodes of [meso-Tetrakis(pentafluorophenyl)porphyrinato]platinum(ii) as efficient, oxidation-resistant red phosphor)
- IT Luminescence, **electroluminescence**
(voltage-dependent; spectroscopic properties and applications in organic **light-emitting** diodes of [meso-Tetrakis(pentafluorophenyl)porphyrinato]platinum(ii) as efficient, oxidation-resistant red phosphor)
- IT 220694-90-6
(PtF20TPP-doped **electroluminescent** layer; spectroscopic properties and applications in organic **light-emitting** diodes of [meso-Tetrakis(pentafluorophenyl)porphyrinato]platinum(ii) as efficient, oxidation-resistant red phosphor)
- IT 147-14-8, Copper phthalocyanine
(buffer layer; spectroscopic properties and applications in organic **light-emitting** diodes of [meso-Tetrakis(pentafluorophenyl)porphyrinato]platinum(ii) as efficient, oxidation-resistant red phosphor)
- IT 123847-85-8, NPB
(hole-transporting layer; spectroscopic properties and applications in organic **light-emitting** diodes of [meso-Tetrakis(pentafluorophenyl)porphyrinato]platinum(ii) as efficient, oxidation-resistant red phosphor)
- IT 109781-47-7
(spectroscopic properties and applications in organic **light-emitting** diodes of [meso-Tetrakis(pentafluorophenyl)porphyrinato]platinum(ii) as efficient, oxidation-resistant red phosphor)
- IT 14187-14-5
(spectroscopic properties and applications in organic **light-emitting** diodes of [meso-Tetrakis(pentafluorophenyl)porphyrinato]platinum(ii) as efficient, oxidation-resistant red phosphor)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ACCESSION NUMBER: 139:140633 HCA
TITLE: Red **electroluminescent** devices based
on a porphyrin metal complex
AUTHOR(S): Guo, Jianhua; Ye, Kaiqi; Wu, Ying; Liu, Yu;
Wang, Yue
CORPORATE SOURCE: Key Laboratory for Supramolecular Structure and
Materials of Ministry of Education, Jilin
University, Changchun, 130023, Peop. Rep. China
SOURCE: Synthetic Metals (2003), 137(1-3), 1075-1076
CODEN: SYMEDZ; ISSN: 0379-6779
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A red luminescent tetra(1-naphthyl)porphyrin Pt(II) (PtTNP) was
synthesized as an **electroluminescent** material. The
photoluminescent and **electroluminescent** properties of
PtTNP were studied. PtTNP exhibits strong red photoluminance at 655
nm in solution. The authors report that PtTNP can be used as an
emitting material to fabricate **electroluminescent** devices.
PtTNP shows red **electroluminescent** emission at 655 nm with
maximum efficiency of 1.47 cd/A.
IT **566878-51-1P**
(red LEDs based on porphyrin metal complex)
RN 566878-51-1 HCA
CN Platinum, [5,10,15,20-tetra-1-naphthalenyl-21H,23H-porphinato(2-)-
 κ N21, κ N22, κ N23, κ N24]-, (SP-4-1)- (9CI) (CA
INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 28

ST LED red porphyrin complex metal; platinum complex porphyrin naphthyl
LED red; UV visible spectra platinum complex porphyrin naphthyl;
luminescence platinum complex porphyrin naphthyl; current voltage
LED platinum complex porphyrin naphthyl; **electroluminescence**
platinum complex porphyrin naphthyl LED

IT Electric current-potential relationship
Luminescence, **electroluminescence**
(of platinum 5,10,15,20-tetra(naphthyl)porphyrin LEDs)

IT **Electroluminescent** devices
(red LEDs based on porphyrin metal complex)

IT **566878-51-1P**
(red LEDs based on porphyrin metal complex)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

L22 ANSWER 12 OF 24 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 139:16629 HCA

TITLE: Selective measurement of gaseous hydrogen
peroxide with light emitting diode-based
liquid-core waveguide absorbance detector

AUTHOR(S): Li, Jianzhong; Dasgupta, Purnendu K.

CORPORATE SOURCE: Department of Chemistry and Biochemistry, Texas
Tech University, Lubbock, TX, 79409-1061, USA

SOURCE: Analytical Sciences (2003), 19(4), 517-523

CODEN: ANSCEN; ISSN: 0910-6340

PUBLISHER: Japan Society for Analytical Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Atmospheric H₂O₂ is typically determined by enzymically mediated
fluorogenic

reactions that do not discriminate between H₂O₂ and organic peroxides.
Reactions of Ti(IV) with H₂O₂ also was the basis of colorimetric
measurements of H₂O₂ but is too insensitive. A more sensitive
determination

is possible with the Ti(IV)-4-(2-pyridylazo)resorcinol (PAR)
complex, however, unreacted PAR must be chromatog. separated. A
titanium(IV)-porphyrin complex, oxo[5,10,15,20-tetra(4-
pyridyl)porphyrinato]titanium(IV) [TiO(tpypH₄)₄], (TiTPyP) was
introduced for the measurement of aqueous H₂O₂. TiTPyP can be used
for

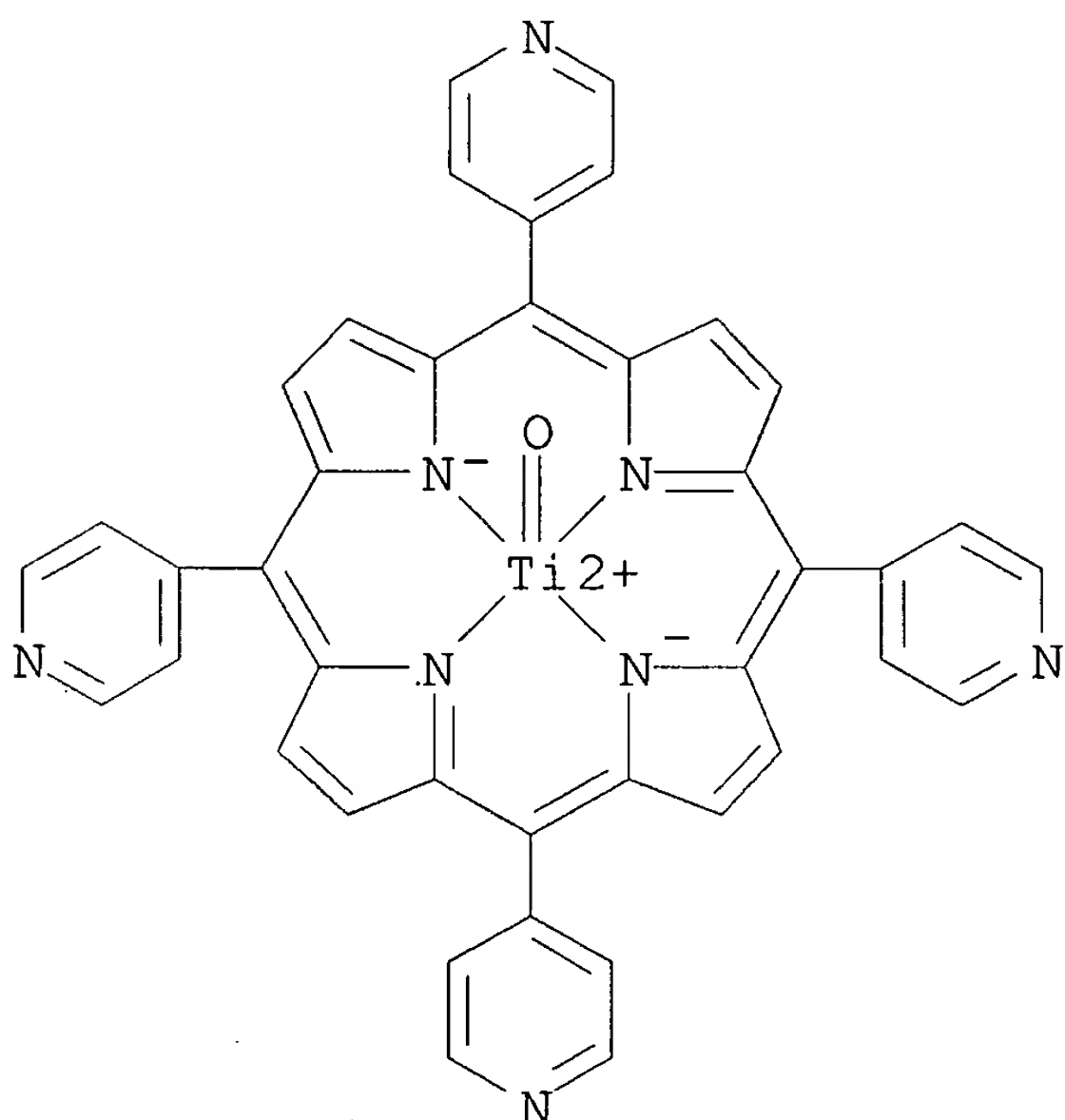
measuring H₂O₂(g), it does not respond to MeH₂O₂. With a proper
membrane collector, practically there is no interference from
concurrently present gaseous SO₂ and O₃. The approach permits a S/N
= 3 limit of detection (LOD) of 26 pptv with a 50 mm path liquid core

waveguide (LCW) absorbance detector and a light emitting diode based light source. This is adequate for real atmospheric measurements.

IT 105250-49-5, Oxo[5,10,15,20-tetrakis(4-pyridyl)porphyrinato]titanium(IV)
 (gaseous hydrogen peroxide determination by optical gas sensor with **light emitting** diode-based liquid-core waveguide and tetrapyridyl porphyrinato titanium)

RN 105250-49-5 HCA

CN Titanium, oxo[5,10,15,20-tetra-4-pyridinyl-21H,23H-porphinato(2-)-κN21,κN22,κN23,κN24]-, (SP-5-12)-(9CI) (CA INDEX NAME)



CC 79-2 (Inorganic Analytical Chemistry)
 Section cross-reference(s): 59

IT 105250-49-5, Oxo[5,10,15,20-tetrakis(4-pyridyl)porphyrinato]titanium(IV)
 (gaseous hydrogen peroxide determination by optical gas sensor with **light emitting** diode-based liquid-core waveguide and tetrapyridyl porphyrinato titanium)

REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L22 ANSWER 13 OF 24 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 137:317321 HCA

TITLE: Light emission from porphyrin molecules induced
 by a scanning tunneling microscope

AUTHOR(S): Dong, Zhen-Chao; Kar, Asit; Zou, Zhi-Qiang;
Ohgi, Taizo; Dorozhkin, Pavel; Fujita, Daisuke;
Yokoyama, Shiyoshi; Terui, Toshifumi; Yamada,
Toshiki; Kamikado, Toshiya; Zhou, Minniu;
Mashiko, Shinro; Okamoto, Takayuki

CORPORATE SOURCE: National Institute for Materials Science,
Tsukuba, 305-0047, Japan

SOURCE: Japanese Journal of Applied Physics, Part 1:
Regular Papers, Short Notes & Review Papers
(2002), 41(7B), 4898-4902
CODEN: JAPNDE

PUBLISHER: Japan Society of Applied Physics

DOCUMENT TYPE: Journal

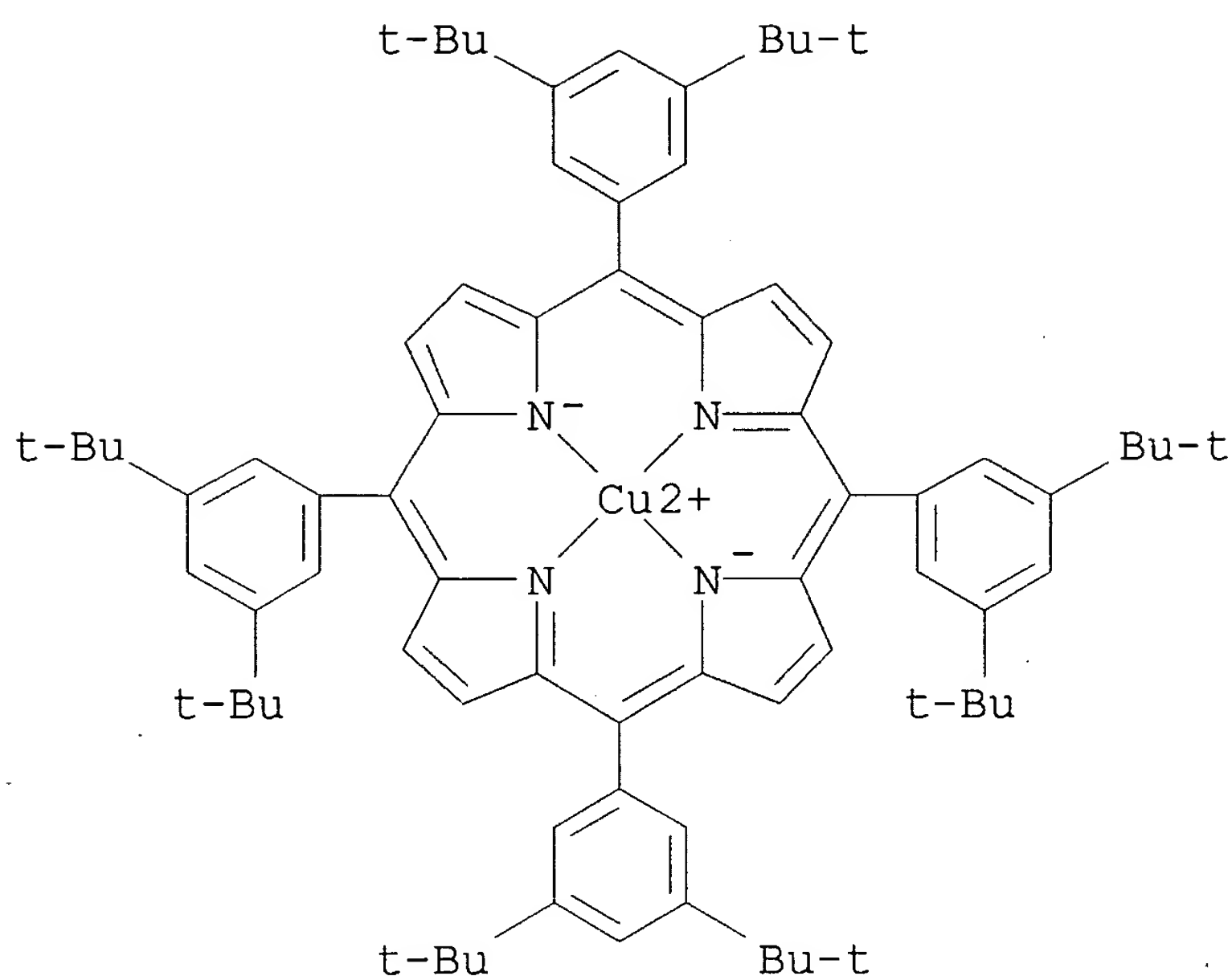
LANGUAGE: English

AB Positioning of a scanning tunneling microscope (STM) tip above Cu
meso-tetrakis(3,5-di-tert-butylphenyl)porphyrin (Cu-TBPP) mols. on
Cu(100) induces plasmon-mediated emission and mol. luminescence when
bias voltages are .gtorsim.2.3 V. Optical spectra acquired at a low
current of 0.2 nA suggest not only the enhancement effect of the
mols. on light emission but also new features associated with the
mols.

IT 146164-93-4, Copper meso-tetrakis(3,5-di-tert-
butylphenyl)porphyrin
(**electroluminescence** induced by scanning tunneling
microscopy)

RN 146164-93-4 HCA

CN Copper, [5,10,15,20-tetrakis[3,5-bis(1,1-dimethylethyl)phenyl]-
21H,23H-porphinato(2-)-κN21,κN22,κN23,κN24]-
, (SP-4-1)-(9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

IT **146164-93-4**, Copper meso-tetrakis(3,5-di-tert-butylphenyl)porphyrin

(**electroluminescence** induced by scanning tunneling microscopy)

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 14 OF 24 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 137:270182 HCA

TITLE: Organic electroluminescent material and device

INVENTOR(S): Hiraoka, Mizuho; Yamada, Naoki; Tanabe, Hiroshi; Ueno, Kazunori

PATENT ASSIGNEE(S): Canon Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.

KIND

DATE

APPLICATION NO.

DATE

JP 2002280178

A2

20020927

JP 2001-75647

200103

16

PRIORITY APPLN. INFO.:

JP 2001-75647

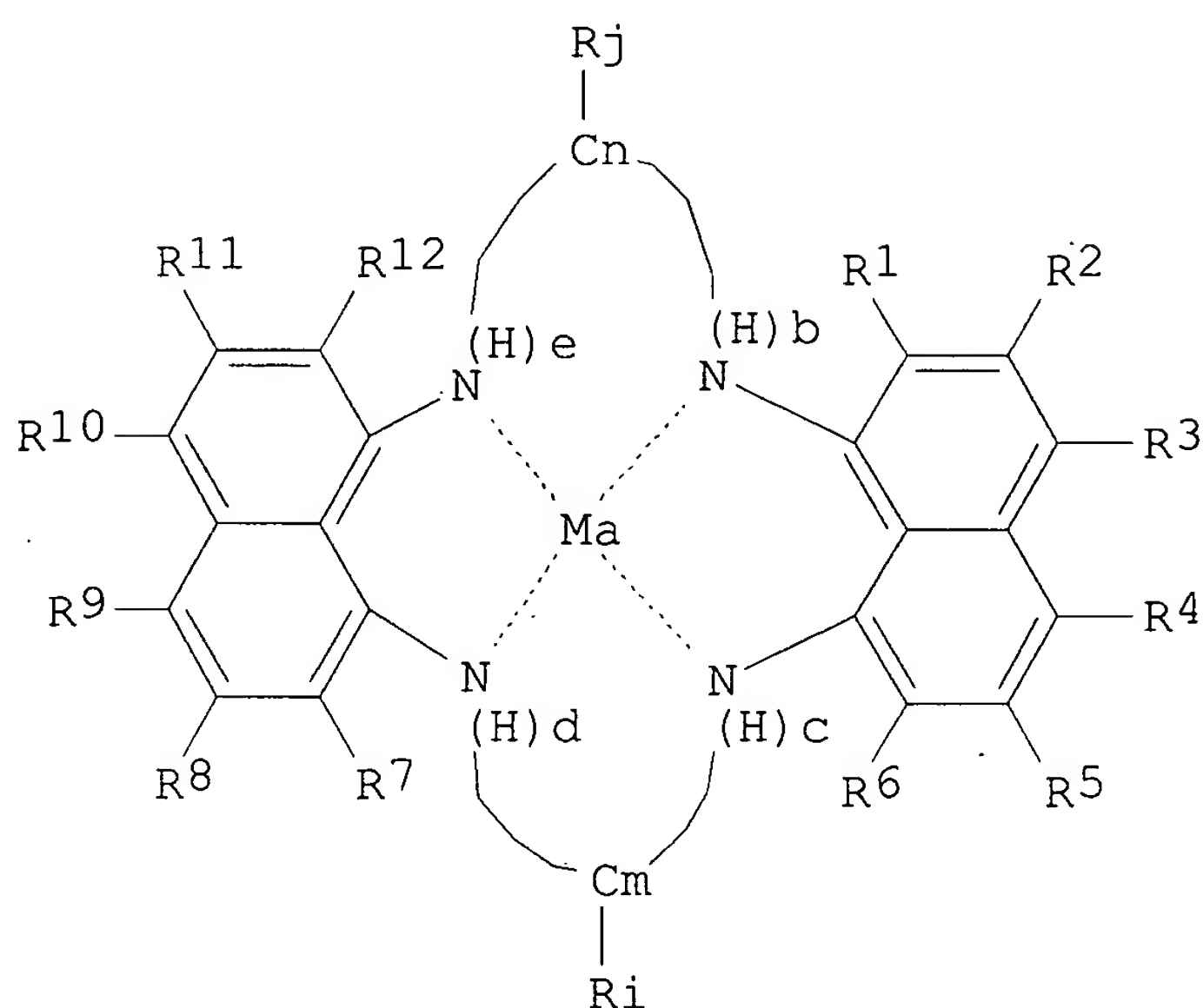
200103

16

OTHER SOURCE(S):

MARPAT 137:270182

GI



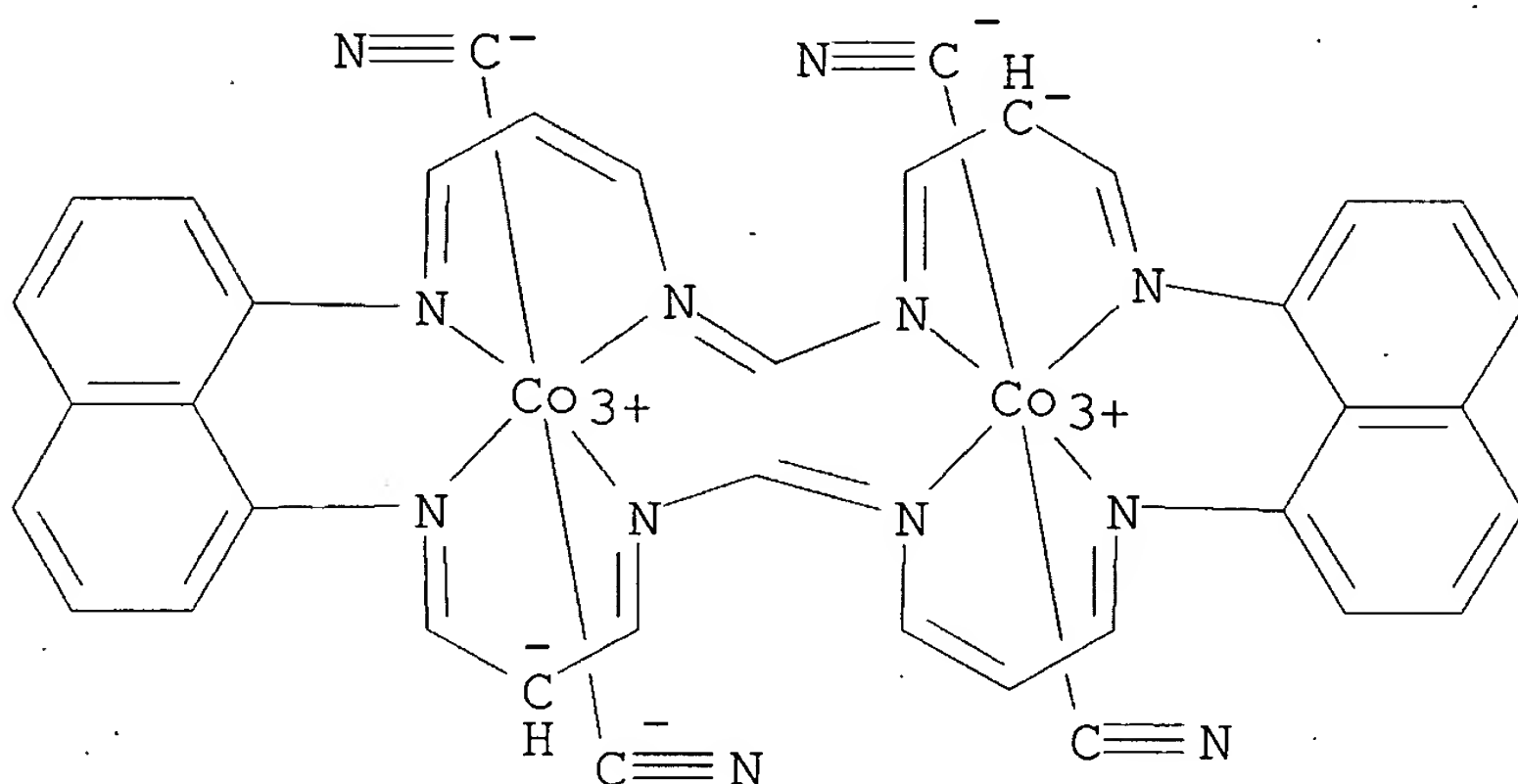
AB The invention refers to an organic electroluminescent device comprising

I as at least one of its luminescent layers [R1-12 = H, halo, (un)substituted aralkyl, alkenyl, alkoxy, aryl, heterocyclic, carbonyl, amino or azo, and adjacent groups may join together to form a ring; Cm, Cn = C1-11 chain; m,n = number of C atoms; if m,n = 1 the C and N have a single bond; if m,n ≥ 2 the C atoms may be unsatd., if m,n ≥ 3, N may be included in the chain; Ri,j = H, halo, (un)substituted alkyl, aralkyl, alkenyl, alkoxy, aryl, heterocyclic, or carbonyl amino or azo, and adjacent groups may be joined to form a ring; M = uni- to penta-valent transition metal; a = 0 - 2; b,c,d,e = 0, 1].

IT 463314-07-0

(organic electroluminescent material and device)

RN 463314-07-0 HCA
 CN Cobalt, tetrakis(cyano-κC) [μ-[9H,26H-dinaphth[1,8-hi:1',8'-vw][1,3,7,11,15,17,21,25]octaazacyclooctacosinato(2-)-κN7,κN11,κN30,κN34:κN13,κN17,.ka ppa.N24,κN28]]di- (9CI) (CA INDEX NAME)



IC ICM H05B033-14
 ICS C09K011-06; H05B033-22
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 IT 462863-10-1 463314-06-9 **463314-07-0**
 (organic **electroluminescent** material and device)

L22 ANSWER 15 OF 24 HCA COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 137:208156 HCA
 TITLE: Metal-containing dendrimers
 INVENTOR(S): Burn, Paul Leslie; Christou, Victor; Lo, Shi-Chun; Pillow, Jonathan Nigel Gerard; Lupton, John Mark; Samuel, Ifor David William
 PATENT ASSIGNEE(S): Isis Innovation Limited, UK
 SOURCE: PCT Int. Appl., 77 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|--------|
| WO 2002066552 | A1 | 20020829 | WO 2002-GB750 | 200202 |

20

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,
 CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,
 GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,
 LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,
 NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,
 TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM,
 AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE,
 CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT,
 SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
 SN, TD, TG

CA 2438745 AA 20020829 CA 2002-2438745

200202
20

EP 1366113 A1 20031203 EP 2002-700455

200202
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
 PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

JP 2004530254 T2 20040930 JP 2002-566264

200202
20

US 2004137263 A1 20040715 US 2004-468716

200402
13

PRIORITY APPLN. INFO.:

GB 2001-4175 A

200102
20

GB 2001-6307 A

200103
14

WO 2002-GB750 W

200202
20

AB **Light-emitting** devices are described which comprise ≥ 1 layer that contains an organometallic dendrimer with a metal cation as part of its core, the core not comprising a magnesium-chelated porphyrin. Organometallic dendrimers which comprise a metal cation as part of its core and ≥ 2 dendrons are described in which ≥ 1 of the dendrons is conjugated, the dendrimer is luminescent in the solid state, and the core does not comprise a magnesium-chelated porphyrin. Blends of the organometallic dendrimers and a corresponding nonmetallic dendrimer having the same dendritic structure as that of the organometallic

dendrimer are also described. Methods for producing dendrimers are described which entail providing a core by forming a complex between a metal cation and ≥ 2 coordinating groups, at least two of the the groups bearing a reactive functionality; and treating the core thus provided with ≥ 2 dendrons which were functionalized to render them reactive towards the reactive functionalities present in the core, ≥ 1 of the dendrons being conjugated. Methods for producing dendrimers are also described which entail attaching a coordinating group to each of ≥ 2 dendrons; forming a complex between the coordinating groups and a metal cation; and optionally further treating the complex with ≥ 1 addnl. coordinating ligands.

IT 453538-25-5P

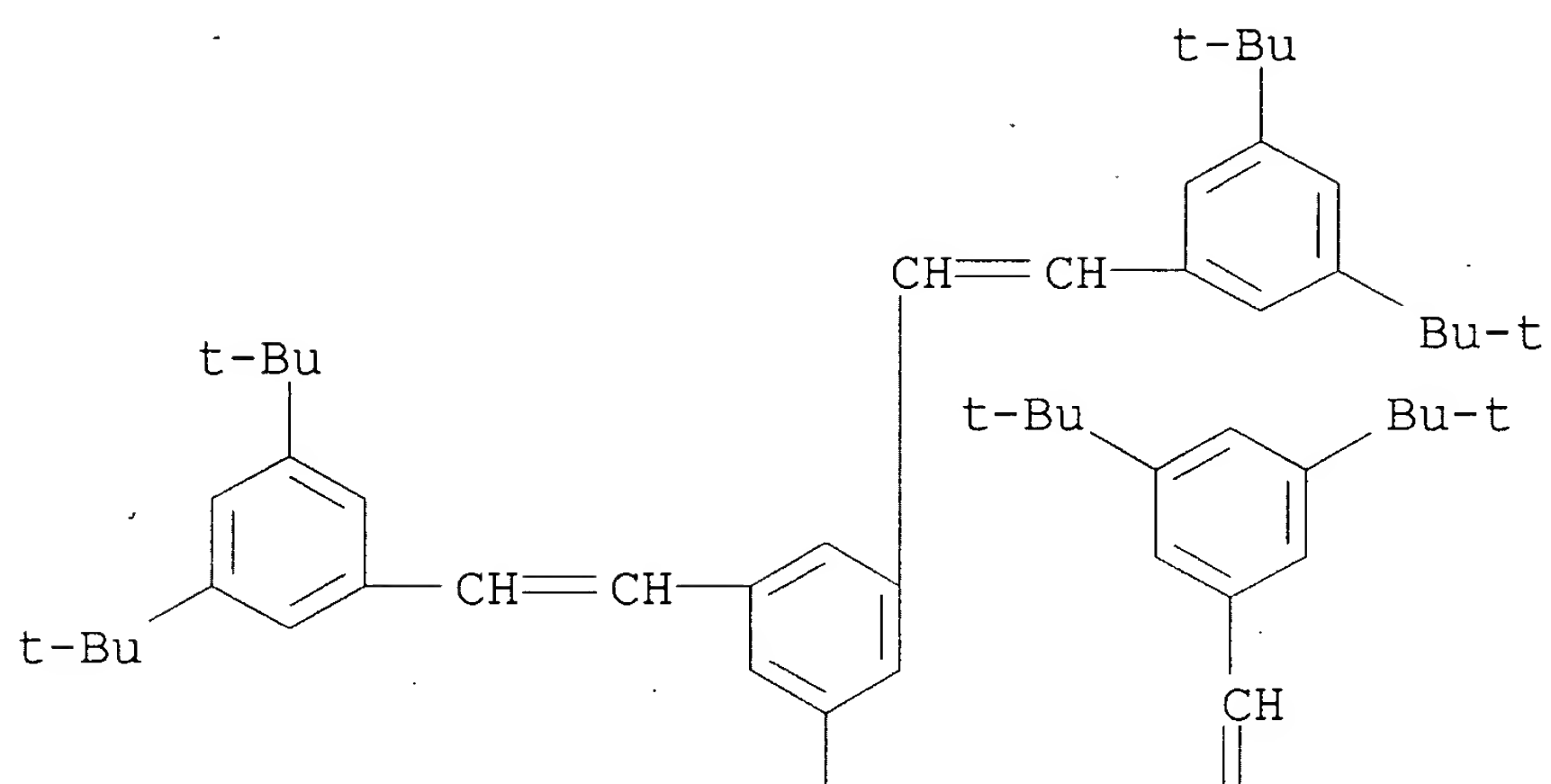
(metal-containing dendrimers and their production and blends containing them

and **light-emitting** devices using them)

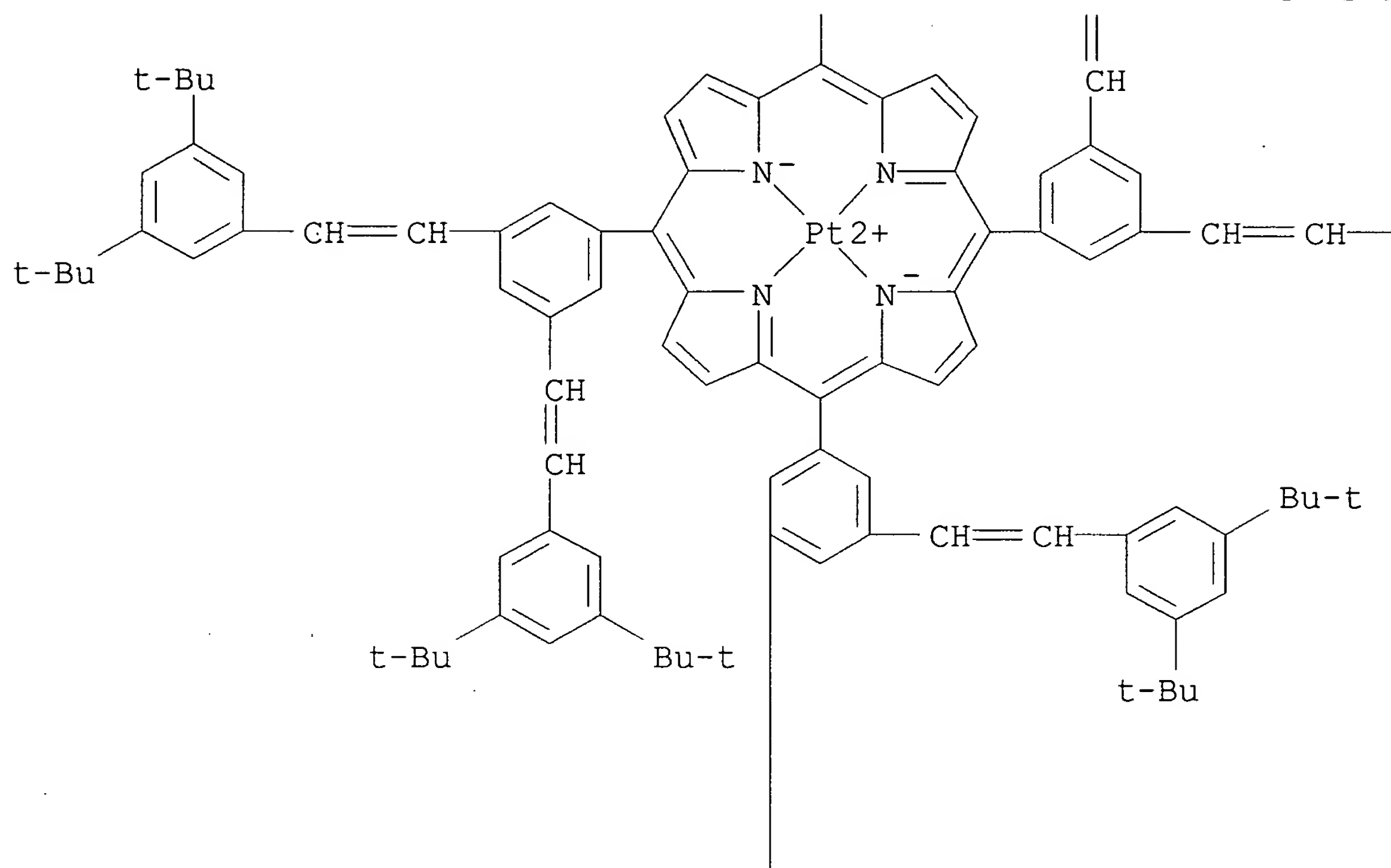
RN 453538-25-5 HCA

CN Platinum, [5,10,15,20-tetrakis[3,5-bis[2-[3,5-bis(1,1-dimethylethyl)phenyl]ethenyl]phenyl]-21H,23H-porphinato(2-)- $\kappa N21, \kappa N22, \kappa N23, \kappa N24$]-, (SP-4-1)-(9CI) (CA INDEX NAME)

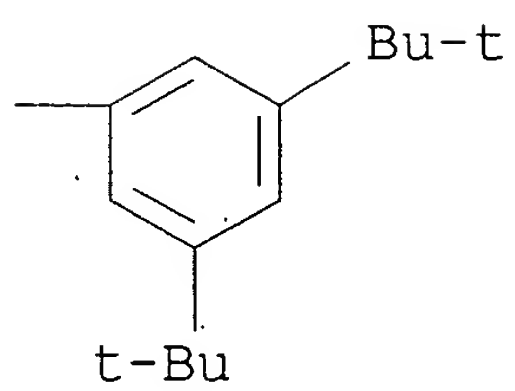
PAGE 1-A



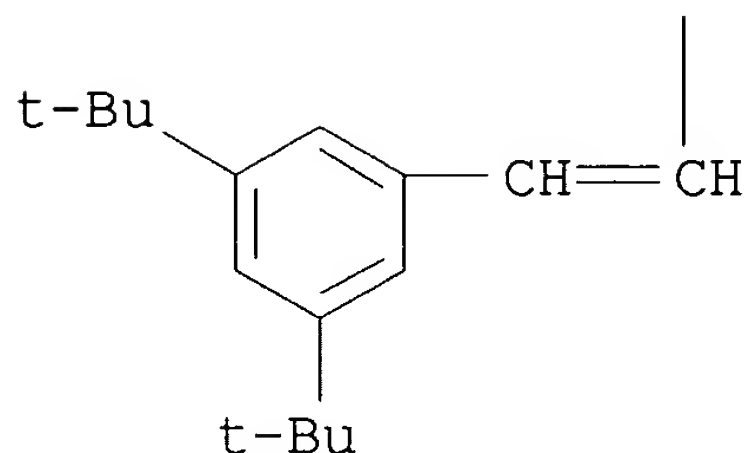
PAGE 2-A



PAGE 2-B



PAGE 3-A



- IC ICM C08K005-56
ICS C09K011-00; C09K011-06; H01L051-00; H01L051-30; C08G083-00
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 37, 76, 78
- ST organometallic dendrimer **light emitting** device
- IT Luminescent substances
(**electroluminescent**; metal-containing dendrimers and their production and blends containing them and **light-emitting** devices using them)
- IT **Electroluminescent** devices
(metal-containing dendrimers and their production and blends containing them and **light-emitting** devices using them)
- IT Dendritic polymers
Organometallic compounds
(metal-containing dendrimers and their production and blends containing them and **light-emitting** devices using them)
- IT 66-71-7D, 1,10-Phenanthroline, reaction products with organometallic dendrimers 366-18-7D, 2,2'-Dipyridyl, reaction products with organometallic dendrimers 4733-39-5D, Bathocuproin, reaction products with organometallic dendrimers 11104-93-1D, Nitrogen oxide, reaction products with organometallic dendrimers 72914-19-3D, reaction products with organometallic dendrimers
(metal-containing dendrimers and their production and blends containing them and **light-emitting** devices using them)
- IT 340026-47-3 454180-93-9
(metal-containing dendrimers and their production and blends containing them and **light-emitting** devices using them)
- IT 453530-55-7P 453538-19-7P 453538-20-0P 453538-22-2P
453538-23-3P 453538-24-4P **453538-25-5P** 453538-26-6P
453559-39-2P 453560-17-3P
(metal-containing dendrimers and their production and blends containing them)

and **light-emitting** devices using them)

IT 106-41-2, 4-Bromophenol 109-04-6, 2-Bromopyridine 121-43-7,
Trimethyl borate 626-39-1, 1,3,5-Tribromobenzene 1008-89-5,
2-Phenylpyridine 1184-63-0, Europium trisacetate 1461-22-9
1791-26-0, 4-Vinylbenzaldehyde 4316-58-9, Tris(4-bromophenyl)amine
5467-74-3, 4-Bromophenylboronic acid 6825-20-3,
3,6-Dibromocarbazole 7511-49-1 7646-69-7, Sodium hydride
10025-83-9, Iridium trichloride 25519-07-7, Terbium trisacetate
40000-20-2 56990-02-4, 3,5-Dibromobenzaldehyde 61676-62-8,
2-Isopropoxy-4,4,5,5-tetramethyl-1,3,2-dioxaborolane 89598-96-9,
3-Bromophenylboronic acid 223574-14-9 240810-88-2 453530-49-9

(metal-containing dendrimers and their production and blends
containing them

and **light-emitting** devices using them)

IT 4373-60-8P 63996-36-1P 164352-24-3P 355017-81-1P
355017-82-2P 452369-35-6P 452369-36-7P 452369-39-0P
453524-83-9P 453530-44-4P 453530-45-5P 453530-46-6P
453530-47-7P 453530-48-8P 453530-50-2P 453530-53-5P
453530-54-6P 453530-56-8P 453530-70-6P 453538-21-1P
453538-27-7P 453560-26-4P

(metal-containing dendrimers and their production and blends
containing them

and **light-emitting** devices using them)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

L22 ANSWER 16 OF 24 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 134:305280 HCA

TITLE: Phosphorescence-based method and apparatus for
determining the effect of a drug on cell
respiration rate

INVENTOR(S): Wilson, David F.; Vinogradov, Sergei A.

PATENT ASSIGNEE(S): Trustees of the University of Pennsylvania, USA

SOURCE: PCT Int. Appl., 35 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| WO 2001026609 | A2 | 20010419 | WO 2000-US28481 | 200010 13 |
| WO 2001026609 | A3 | 20020110 | | |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,
 CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH,
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK,
 LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ,
 PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ,
 UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU,
 TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH,
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE,
 BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 6395555 B1 20020528 US 1999-418104

199910
14

CA 2386842 AA 20010419 CA 2000-2386842

200010
13

AU 2001012046 A5 20010423 AU 2001-12046

200010
13

EP 1224443 A2 20020724 EP 2000-973545

200010
13

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
 PT, IE, SI, LT, LV, FI, RO, MK, CY, AL

PRIORITY APPLN. INFO.:

US 1999-418104

A

199910
14

WO 2000-US28481

W

200010
13

OTHER SOURCE(S): MARPAT 134:305280

AB A method is described for determining the effect of a drug or drugs on an

attached culture of cells comprising (i) dissolving a phosphorescent compound, of known or predetd. quenching constant and lifetime at zero oxygen, in a culture medium at a selected temperature comprising an attached culture of test cells; (ii) introducing the drug(s), whose effect on the test cells is to be determined, into the culture medium; (iii) illuminating the culture medium with pulsed or modulated light at a level sufficient to cause the phosphorescent compound to emit measurable phosphorescence; (iv) measuring the emitted phosphorescence; and (v) calculating the phosphorescence lifetime and oxygen concentration gradient in the medium, thereby determining the effect of

the drug on the respiration rate of the cells at the selected temperature

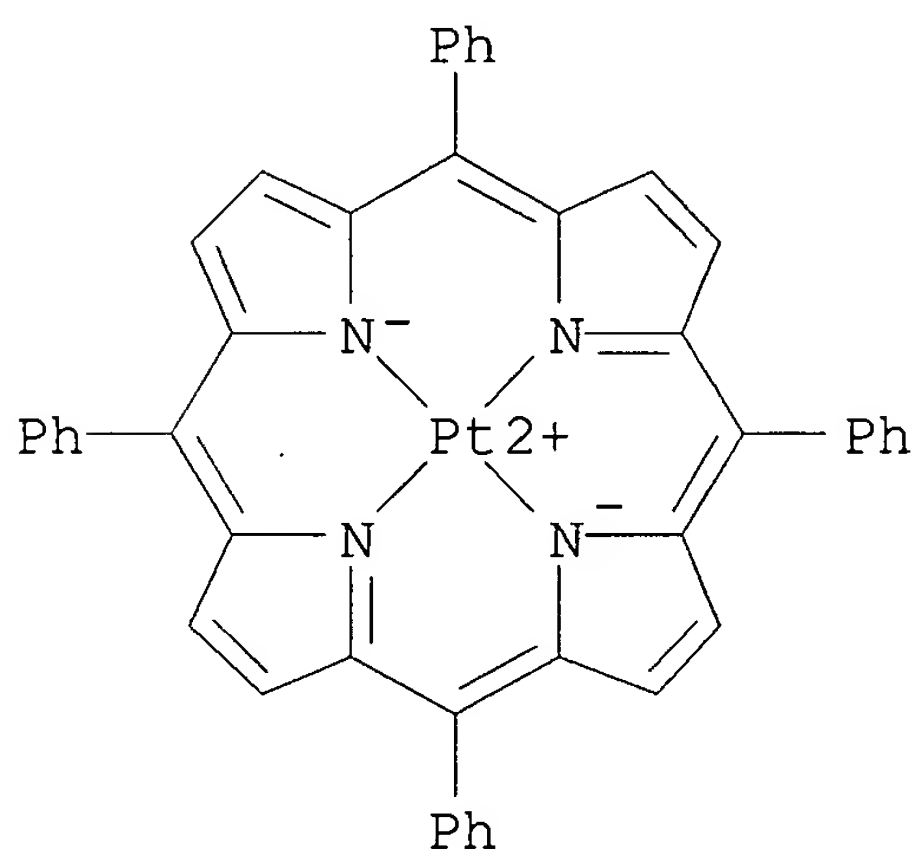
Apparatus for carrying out the method is also disclosed.

IT 14187-14-5 94288-45-6 166174-05-6
166174-13-6

(phosphorescence-based method and apparatus for determining drug effect on cell respiration rate)

RN 14187-14-5 HCA

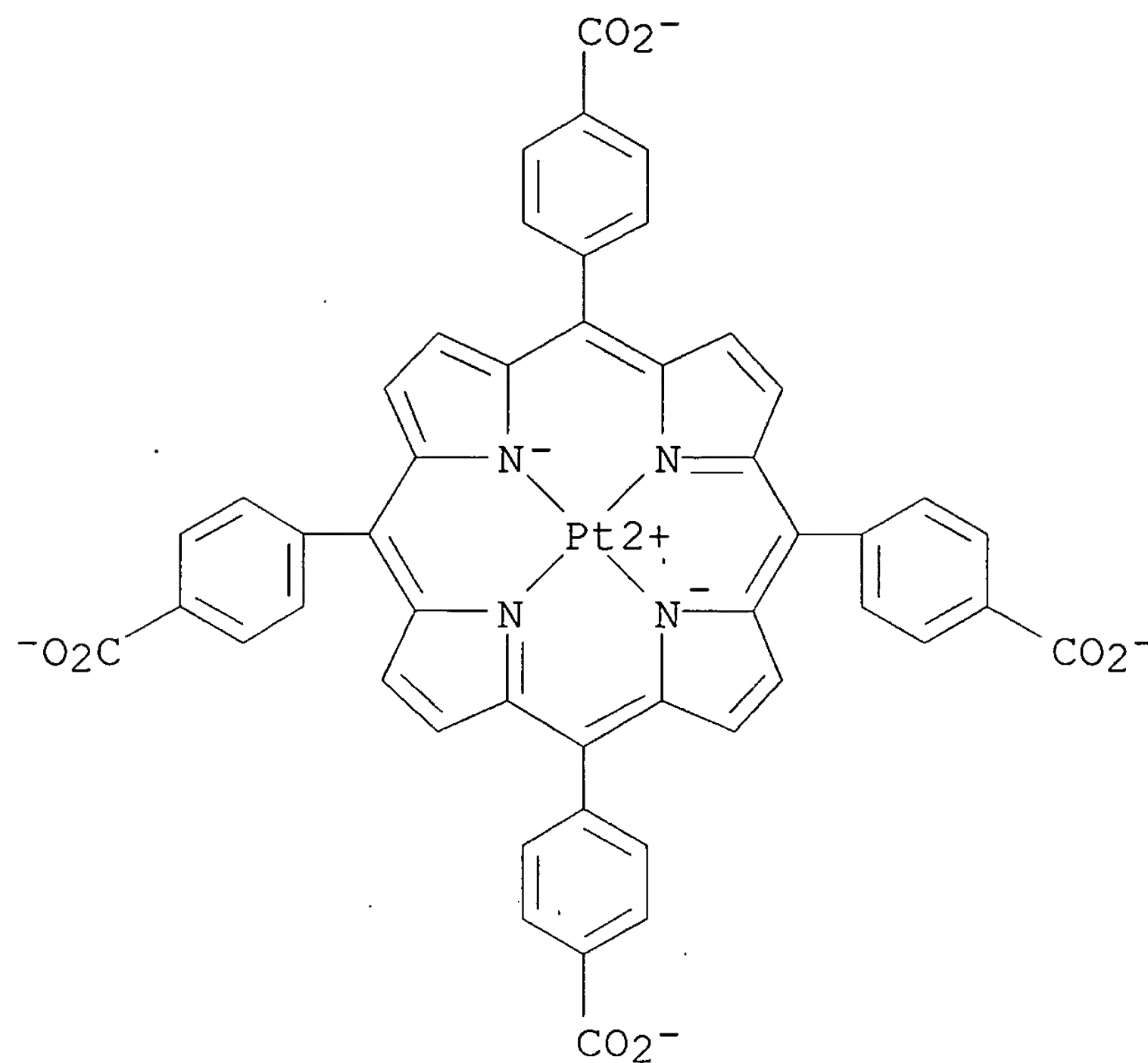
CN Platinum, [5,10,15,20-tetraphenyl-21H,23H-porphinato(2-)-
 κ N21, κ N22, κ N23, κ N24]-, (SP-4-1)- (9CI) (CA
INDEX NAME)



RN 94288-45-6 HCA

CN Platinate(4-), [[4,4',4'',4'''-(21H,23H-porphine-5,10,15,20-tetrayl-
 κ N21, κ N22, κ N23, κ N24)tetrakis[benzoato]](6-)]-
, tetrahydrogen, (SP-4-1)- (9CI) (CA INDEX NAME)

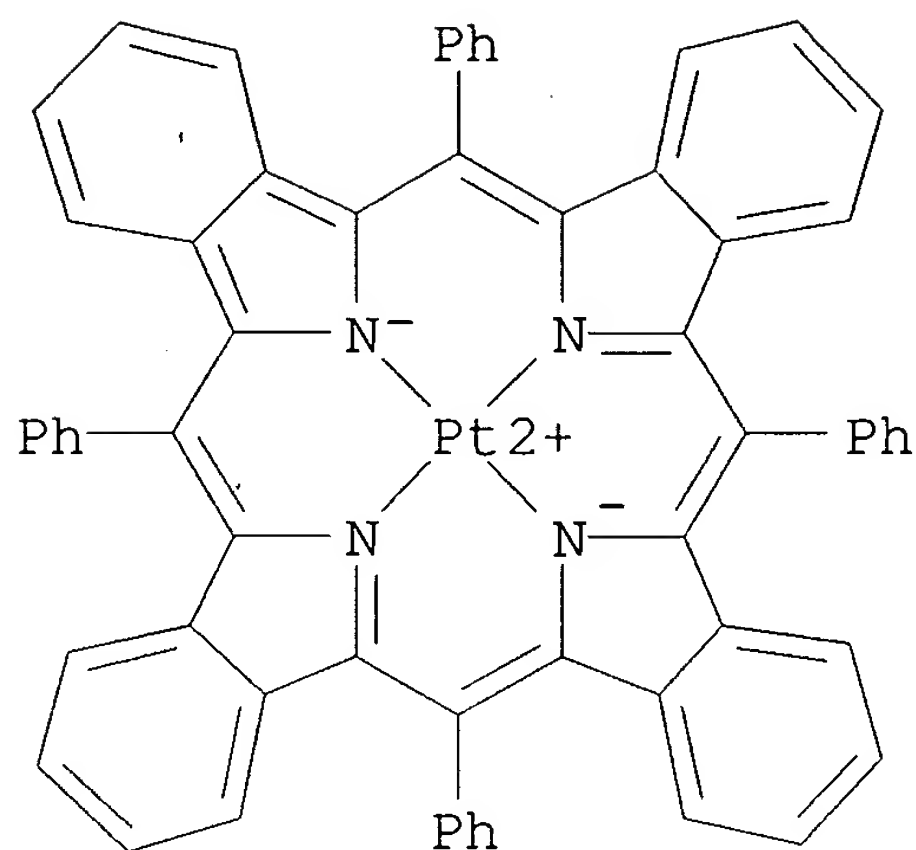
PAGE 1-A



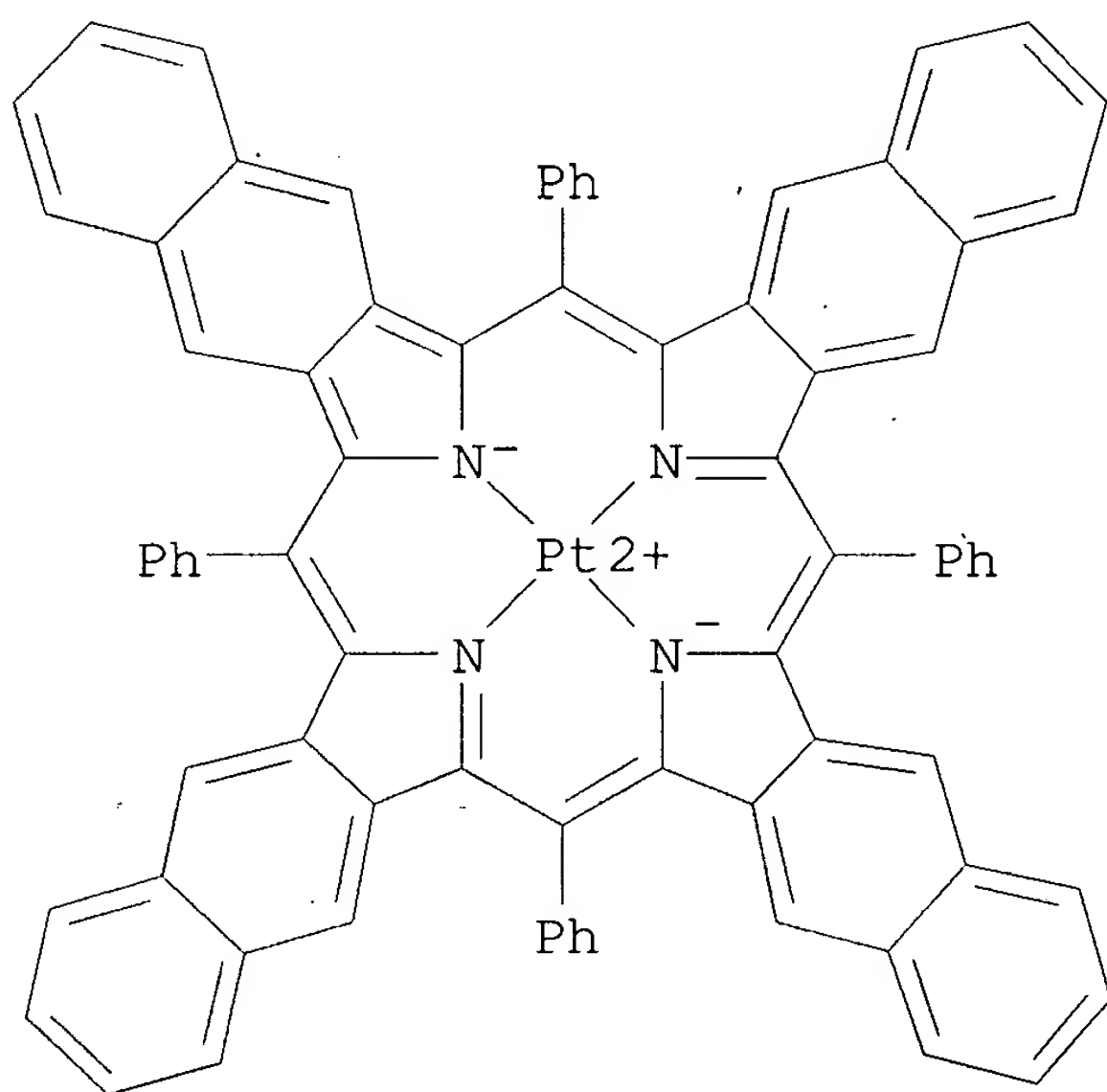
PAGE 2-A

● 4 H^+

RN 166174-05-6 HCA
CN Platinum, [6,13,20,27-tetraphenyl-29H,31H-tetrabenzo[b,g,l,q]porphinato(2-)- $\kappa\text{N}29,\kappa\text{N}30,\kappa\text{N}31,.\kappa\text{N}32$]-, (SP-4-1)- (9CI) (CA INDEX NAME)



RN 166174-13-6 HCA
 CN Platinum, [7,16,25,34-tetraphenyl-37H,39H-tetranaphtho[2,3-b:2',3'-g:2'',3''-1:2''',3'''-q]porphinato(2-)-κN37,κN38,κN39,κN40]-, (SP-4-1)-(9CI) (CA INDEX NAME)



IC ICM A61K
 CC 1-1 (Pharmacology)
 IT **Electroluminescent** devices
 (pulsed **light-emitting** diode;
 phosphorescence-based method and apparatus for determining drug
 effect on

cell respiration rate)

IT 917-23-7D, derivs., metal complexes 7429-90-5D, Aluminum, porphyrin complexes, biological studies 7439-91-0D, Lanthanum, porphyrin complexes, biological studies 7439-94-3D, Lutetium, porphyrin complexes, biological studies 7440-05-3D, Palladium, porphyrin complexes 7440-06-4D, Platinum, porphyrin complexes, biological studies 7440-31-5D, Tin, porphyrin complexes, biological studies 7440-65-5D, Yttrium, porphyrin complexes, biological studies 7440-66-6D, Zinc, porphyrin complexes, biological studies 14074-80-7 14187-13-4D, and derivs., metal complexes **14187-14-5** 14586-52-8 14609-54-2D, derivs., metal complexes 27647-84-3 34439-72-0 52952-31-5D, 29H,31H-Tetrabenzo[b,g,l,q]porphine, derivs., metal complexes 56551-50-9 59828-80-7 59828-88-5 73065-50-6 73523-25-8D, derivs., metal complexes 73797-39-4 80528-89-8D, derivs., metal complexes 80529-82-4 94288-44-5D, and derivs., metal complexes **94288-45-6** 97138-93-7D, derivs., metal complexes 97179-94-7 119654-64-7 123458-16-2D, derivs., metal complexes 152544-47-3 152544-64-4 154034-65-8 161589-08-8 **166174-05-6** 166174-12-5 **166174-13-6** 197451-64-2 216095-28-2 334987-58-5 334987-59-6 334987-60-9 334987-61-0 334987-62-1 334987-63-2 334987-64-3 334987-65-4 334987-66-5 334987-67-6 334987-68-7 334987-69-8 334987-70-1 334987-71-2 334987-72-3 334987-73-4 334987-74-5 334987-75-6 334987-76-7 334987-77-8 334987-78-9 334987-79-0 334987-80-3 334987-81-4

(phosphorescence-based method and apparatus for determining drug effect on

cell respiration rate)

L22 ANSWER 17 OF 24 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 133:274003 HCA

TITLE: Injection-type electroluminescent devices

INVENTOR(S): Kishimoto, Yoshio

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| JP 2000277262 | A2 | 20001006 | JP 1999-85019 | 199903 29 |

PRIORITY APPLN. INFO.:

JP 1999-85019

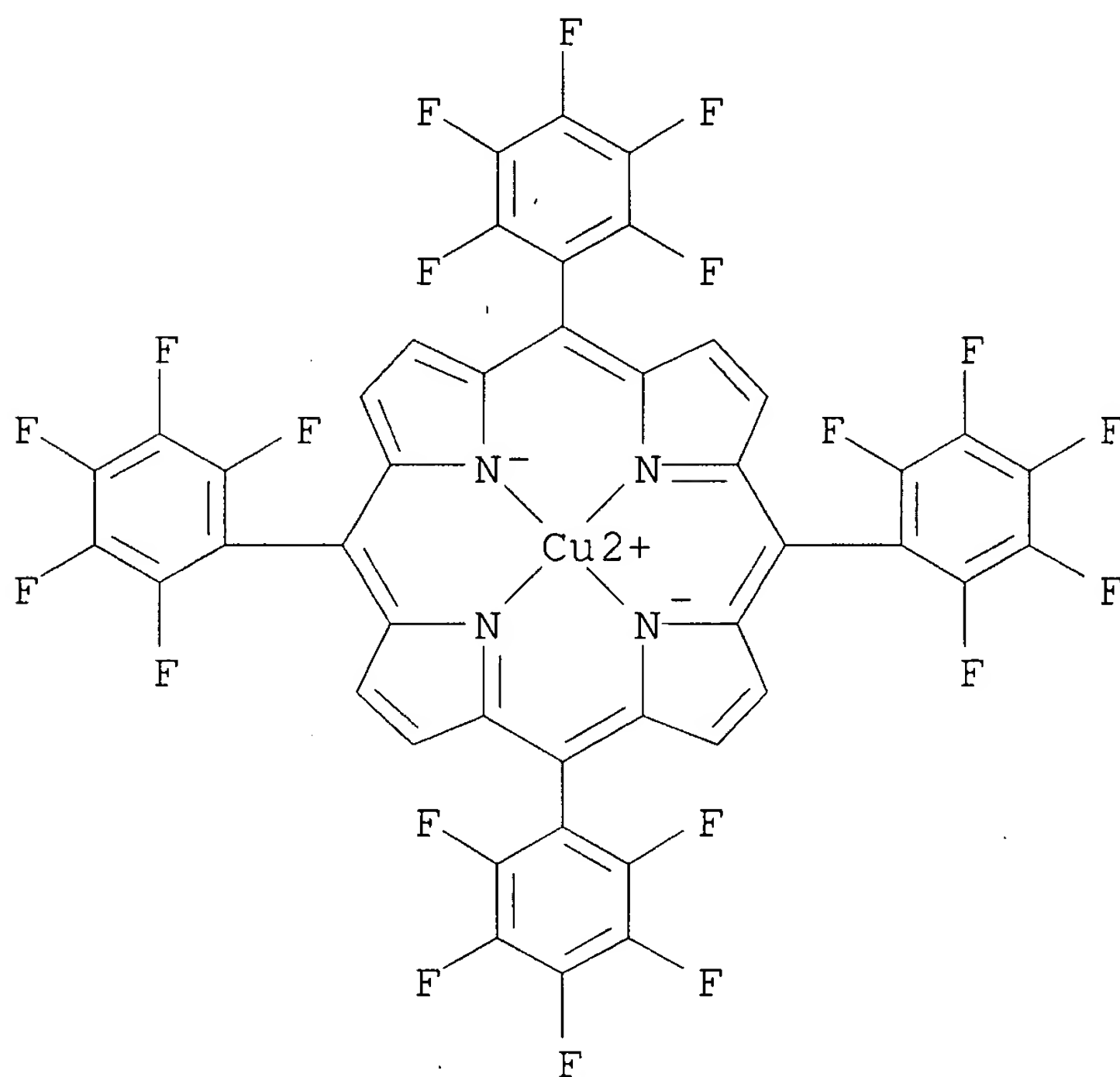
199903
29

AB The devices comprise a transparent anode, a hole injection, an electron-transport/phosphor and a cathode layer, where the phosphor comprises a (metal) porphyrin substituted at 5, 10, 15 and 20 positions with halo Ph and/or cyano Ph.

IT 27882-93-5 28903-71-1
(injection-type **electroluminescent** devices)

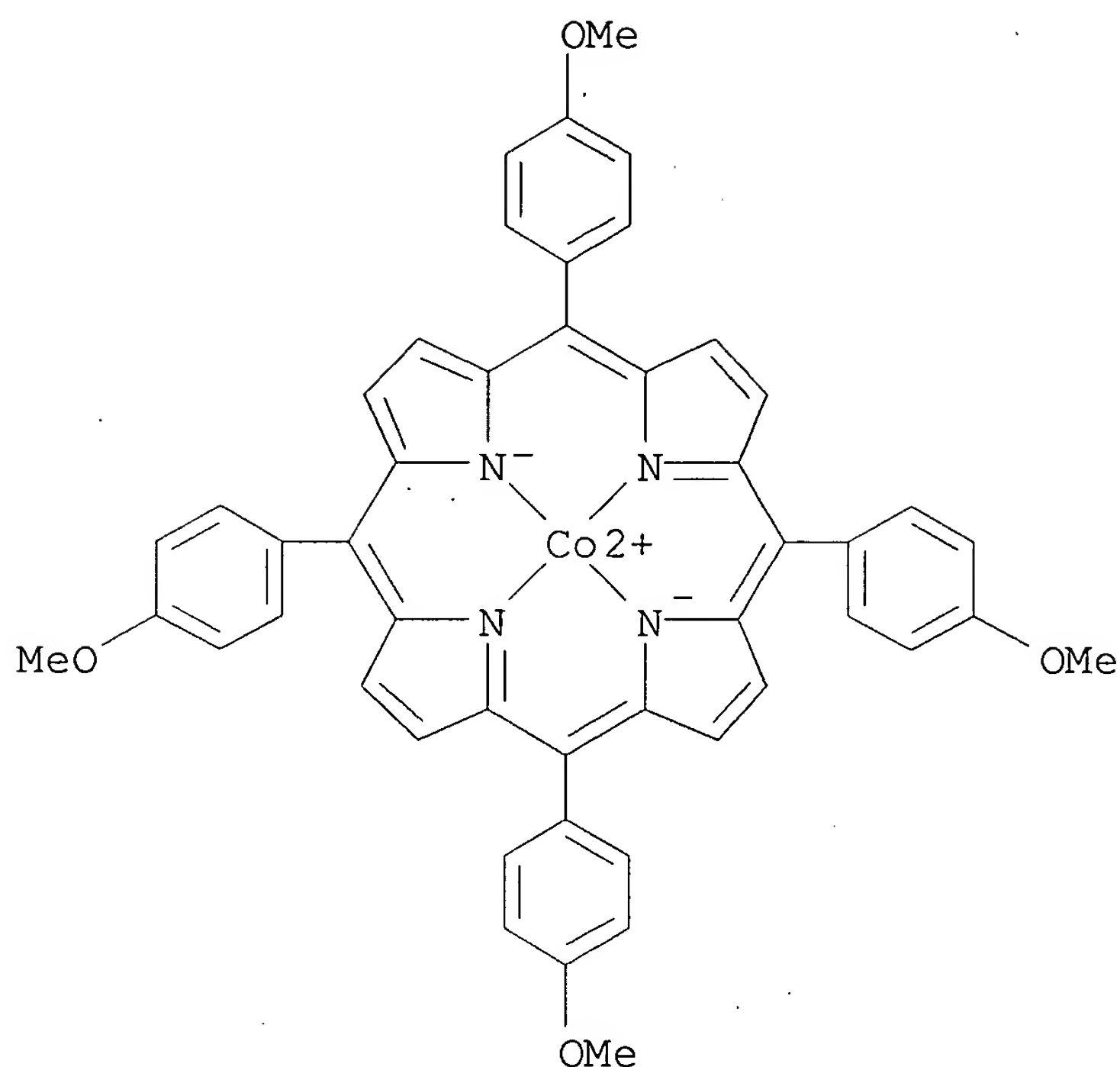
RN 27882-93-5 HCA

CN Copper, [5,10,15,20-tetrakis(pentafluorophenyl)-21H,23H-porphinato(2-)-κN21,κN22,κN23,κN24]-, (SP-4-1)-(9CI)
(CA INDEX NAME)



RN 28903-71-1 HCA

CN Cobalt, [5,10,15,20-tetrakis(4-methoxyphenyl)-21H,23H-porphinato(2-)-κN21,κN22,κN23,κN24]-, (SP-4-1)-(9CI) (CA INDEX NAME)



IC ICM H05B033-14
 ICS C09K011-06
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 IT 917-23-7 12798-95-7 16834-13-2 27882-93-5
 28903-71-1
 (injection-type **electroluminescent** devices)

L22 ANSWER 18 OF 24 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER:

132:85650 HCA

TITLE:

Efficient, Saturated Red Organic **Light Emitting** Devices Based on Phosphorescent Platinum(II) Porphyrins

AUTHOR(S):

Kwong, Raymond C.; Sibley, Scott; Dubovoy, Timur; Baldo, Marc; Forrest, Stephen R.; Thompson, Mark E.

CORPORATE SOURCE:

Department of Chemistry, University of Southern California, Los Angeles, CA, 90089, USA

SOURCE:

Chemistry of Materials (1999), 11(12), 3709-3713
 CODEN: CMATEX; ISSN: 0897-4756

PUBLISHER:

American Chemical Society

DOCUMENT TYPE:

Journal

LANGUAGE:

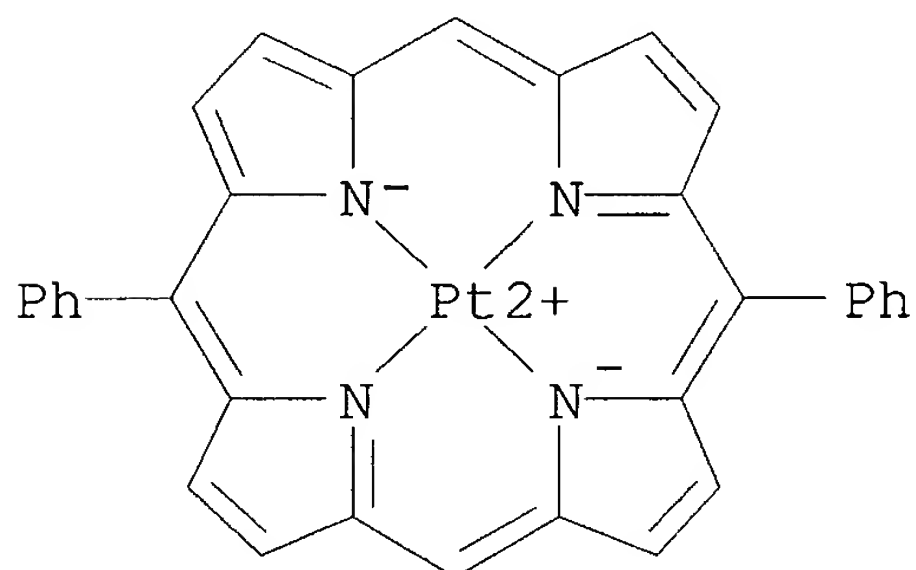
English

AB Two new Pt(II) porphyrins were synthesized and their luminescent properties were studied. Pt porphyrins exhibited strong phosphorescence in the red region with narrow line widths. When they were doped into Al(III) tris(8-hydroxyquinolate) (AlQ3) in the electron-transporting and -emitting layer of an organic **light -emitting** device, energy transfer occurred between the host AlQ3 and the Pt porphyrin. Bright saturated red emission with high efficiency at low to moderate c.d. was achieved. In the high current regime, the **electroluminescence** efficiency decreased and the perceived emission color blue shifted as a result of mixed emission from the Pt porphyrin and AlQ3. This current dependence was due to the saturation of triplet emissive sites, because of the long-lived phosphorescence state of the Pt porphyrin complex.

IT **223241-01-8P**
(preparation, **electroluminescence** and use in red organic **light emitting** devices)

RN 223241-01-8 HCA

CN Platinum, [5,15-diphenyl-21H,23H-porphinato(2-)-
κN21,κN22,κN23,κN24]-, (SP-4-1)-(9CI) (CA
INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)-

Section cross-reference(s): 76, 78

ST platinum porphyrin prepn luminescence **electroluminescence**;
light emitting device phosphorescent platinum
porphyrin

IT Luminescence
Luminescence, **electroluminescence**
(of platinum(II) porphyrins)

IT Metalloporphyrins
(preparation, **electroluminescence** and use in red organic
light emitting devices)

IT **Electroluminescent** devices
(red organic **light emitting** devices based on

phosphorescent platinum(II) porphyrins)
IT 223241-01-8P 254104-18-2P
(preparation, **electroluminescence** and use in red organic
light emitting devices)

IT 2085-33-8, AlQ3 123847-85-8, α -NPD
(red organic **light emitting** devices based on
phosphorescent platinum(II) porphyrins)

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L22 ANSWER 19 OF 24 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 130:303836 HCA

TITLE: Highly transparent non-metallic cathodes

INVENTOR(S): Forrest, Stephen R.; Burrows, Paul;
Parthasarathy, Gautam; O'Brien, Diarmuid;
Thompson, Mark E.; Yu, Yujian; Shoustikov,
Andrei; Petasis, Nicos A.; Sibley, Scott; Loy,
Douglas; Koene, Brian E.; Kwong, Raymond C.

PATENT ASSIGNEE(S): The Trustees of Princeton University, USA; The
University of Southern California

SOURCE: PCT Int. Appl., 165 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| WO 9920081 | A2 | 19990422 | WO 1998-US21171 | 199810 08 |
| WO 9920081 | A3 | 19990826 | | |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, | | | | |
| DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, | | | | |
| KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, | | | | |
| MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, | | | | |
| TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, | | | | |
| MD, RU, TJ, TM | | | | |
| RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, | | | | |
| ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, | | | | |
| CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| US 6469437 | B1 | 20021022 | US 1997-964863 | 199711 05 |
| US 6303238 | B1 | 20011016 | US 1997-980986 | |

| | | | | |
|--|----|----------|----------------|-------------------|
| US 6451455 | B1 | 20020917 | US 1998-53030 | 199712 01 |
| US 6150043 | A | 20001121 | US 1998-58305 | 199804 01 |
| US 6413656 | B1 | 20020702 | US 1998-152960 | 199804 10 |
| AU 9910707 | A1 | 19990503 | AU 1999-10707 | 199809 14 |
| EP 1044586 | A2 | 20001018 | EP 1998-953300 | 199810 08 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | 199810 08 |
| JP 2001520450 | T2 | 20011030 | JP 2000-516507 | 199810 08 |
| EP 1394870 | A2 | 20040303 | EP 2003-25325 | 199810 08 |
| EP 1394870 | A3 | 20040310 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, LT, LV, FI, MK, CY, AL | | | | |
| US 2001053463 | A1 | 20011220 | US 2001-900650 | 200107 06 |
| US 6579632 | B2 | 20030617 | | |
| US 2003203236 | A1 | 20031030 | US 2003-426456 | 200304 30 |
| PRIORITY APPLN. INFO.: | | | US 1997-948130 | A 199710 09 |
| | | | US 1997-64005P | P 199711 03 |
| | | | US 1997-964863 | A 199711 05 |
| | | | US 1997-980986 | A |

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|-----------------|----|--------------|
| | | 199712 01 |
| US 1998-53030 | A | 199804 01 |
| US 1998-53707 | A | 199804 03 |
| US 1998-58305 | A | 199804 10 |
| US 1998-152960 | A | 199809 14 |
| EP 1998-953300 | A3 | 199810 08 |
| WO 1998-US21171 | W | 199810 08 |
| US 2001-900650 | A1 | 200107 06 |

OTHER SOURCE(S): MARPAT 130:303836

AB Cathodes are described which comprise an elec. conductive non-metallic layer in low-resistance elec. contact with a semiconductive organic layer; optoelectronic device comprising a device

for converting elec. energy into optical energy (e.g., organic **light-emitting** devices and lasers), or optical energy into elec. energy, employing the cathodes are also described. Methods of fabricating optoelectronic devices are described which entail depositing an elec. conductive non-metallic layer on an organic layer so as to form an interface region at the surface of the organic layer that lowers the voltage drop across the two layers when the two layers are used as a cathode in an optoelectronic device. Organic **light-emitting** devices (OLEDs) in which the highly transparent non-metallic cathodes may be used are also described comprised of a charge carrier layer containing a compound having mols. that have ≥ 1 electron-transporting moiety and ≥ 1

hole-transporting moiety, OLEDs comprised of an emissive layer containing an azlactone-related dopant, OLEDs comprised of an emissive layer containing a phosphorescent dopant compound, and OLEDs comprised of

a hole transporting layer containing a glassy organic hole-transporting

material comprised of a compound having a sym. mol. structure.

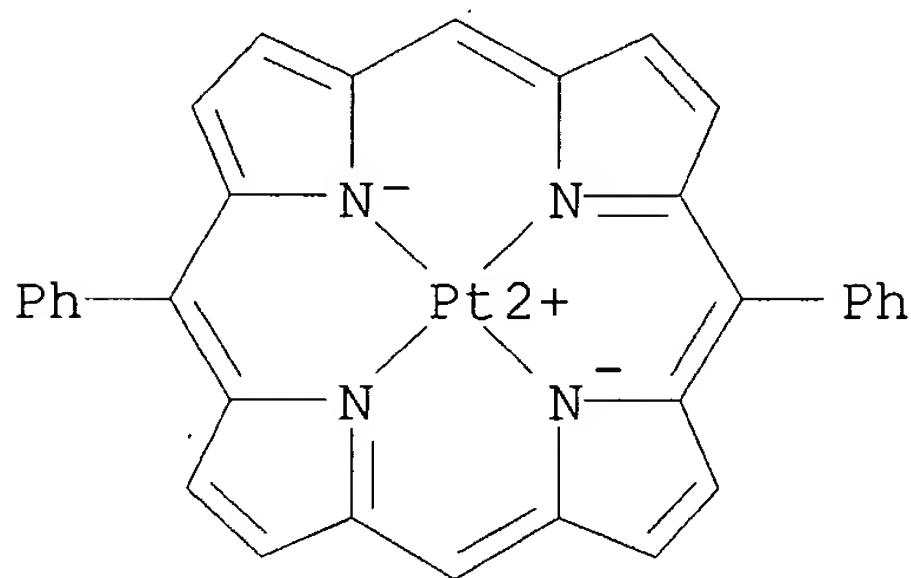
Azlactone derivs. and complexes suitable for use as the dopants are also described.

IT **223241-01-8P**

(transparent non-metallic cathodes and optoelectronic devices using them and their fabrication)

RN 223241-01-8 HCA

CN Platinum, [5,15-diphenyl-21H,23H-porphinato(2-)- κ N21, κ N22, κ N23, κ N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



IC ICM H05B033-26

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

ST org optoelectronic device transparent nonmetallic cathode; laser

transparent nonmetallic cathode; **electroluminescent** device

transparent nonmetallic cathode; azlactone deriv

electroluminescent device

IT Cathodes

Electroluminescent devices

Electroluminescent devices

Optoelectronic semiconductor devices

Photoelectric devices

Semiconductor device fabrication

Semiconductor lasers

(transparent non-metallic cathodes and optoelectronic devices using them and their fabrication)

IT 842-74-0P 1163-85-5P 1564-29-0P 1787-23-1P 66404-30-6P

108941-20-4P 222619-94-5P **223241-01-8P**

(transparent non-metallic cathodes and optoelectronic devices

using them and their fabrication)

L22 ANSWER 20 OF 24 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 130:117409 HCA

TITLE: Organic electroluminescent device for flat panel display

INVENTOR(S): Ishibashi, Tadashi; Onishima, Yasunori; Tamura, Shinichiro

PATENT ASSIGNEE(S): Sony Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. ----- | KIND ---- | DATE ----- | APPLICATION NO. ----- | DATE |
|---------------------|--------------|---------------|--------------------------|----------|
| JP 10335066 | A2 | 19981218 | JP 1997-143861 | 19970602 |
| | | | JP 1997-143861 | 19970602 |

PRIORITY APPLN. INFO.:

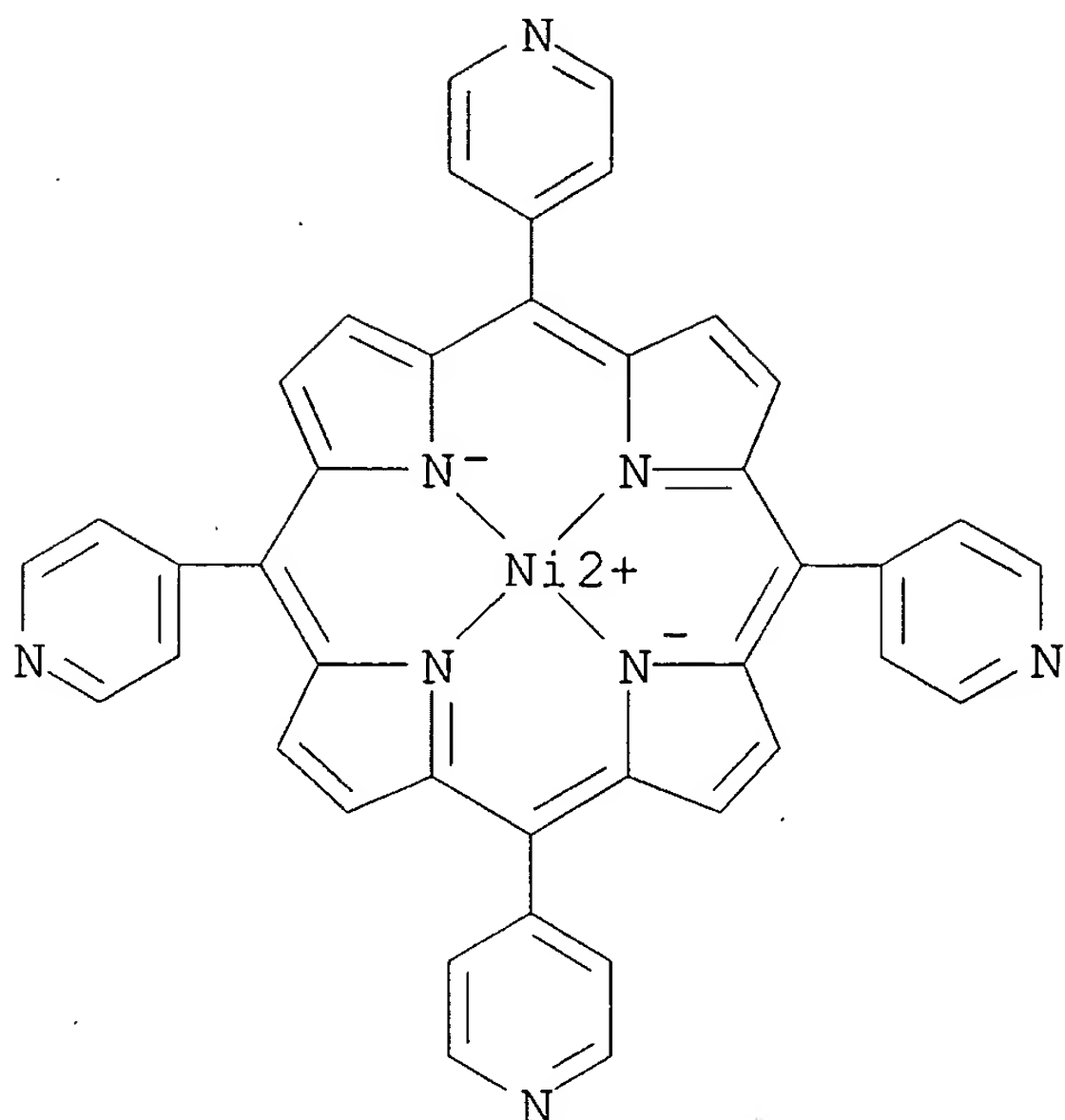
AB An organic electroluminescent device, suited for use in a flat panel display, comprises a hole injection layer made of tetra-Ph metals, and an electron injection layer made of porphyrin derivs., inserted between an anode and a hole transporting layer and between a cathode and an electron transporting layer, resp., to enhance the carrier injection efficiencies.

IT 14514-68-2, 5,10,15,20-Tetra(4-pyridyl)-21H,23H-porphyrin nickel 211513-00-7, 5,10,15,20-Tetra(4-pyridyl)-21H,23H-porphyrin titanium

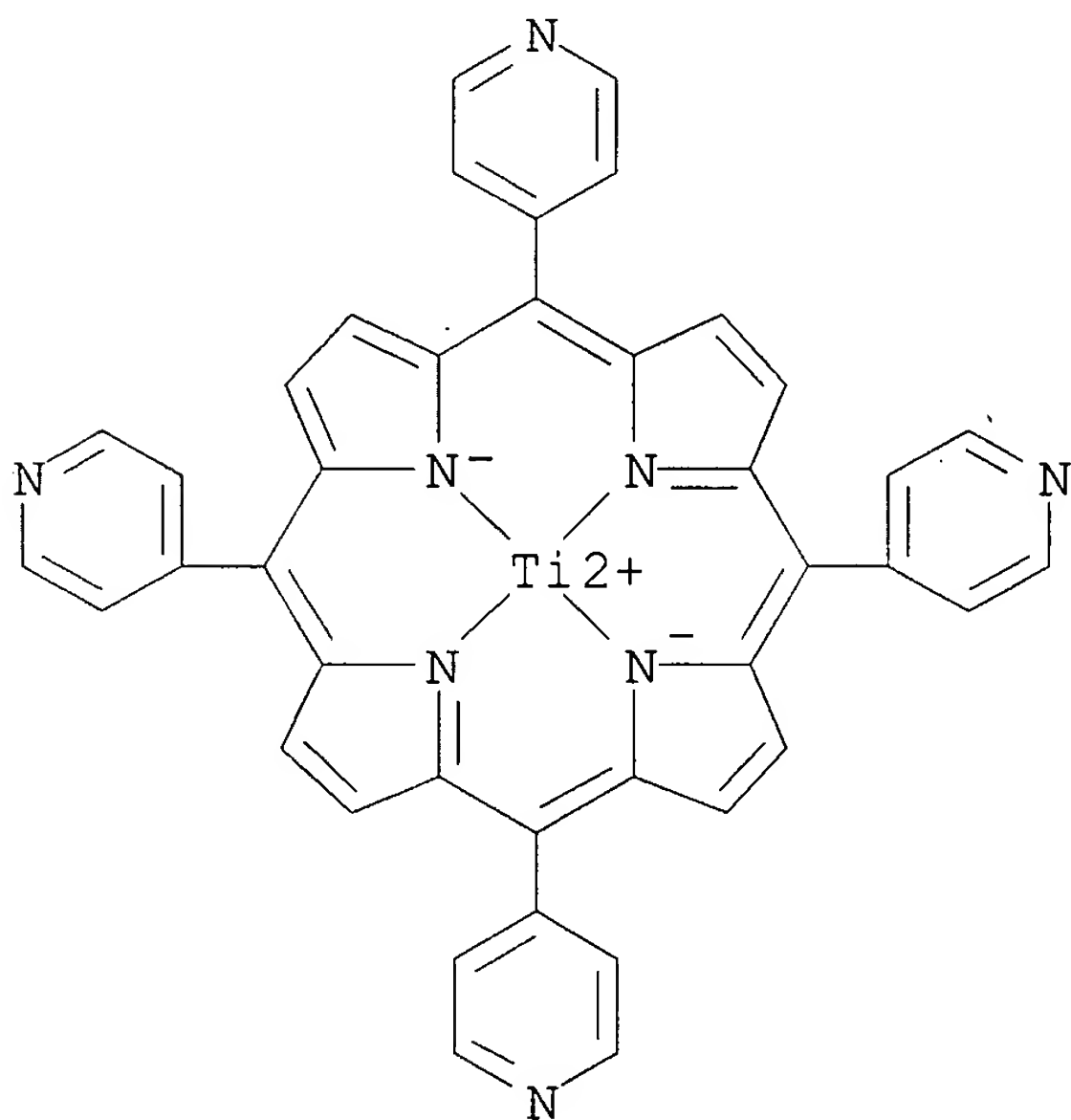
(electron injection layer used in organic electroluminescent device for flat panel display)

RN 14514-68-2 HCA

CN Nickel, [5,10,15,20-tetra-4-pyridinyl-21H,23H-porphinato(2-)-κN21,κN22,κN23,κN24]-, (SP-4-1)-(9CI) (CA INDEX NAME)



RN 211513-00-7 HCA
CN Titanium, [5,10,15,20-tetra-4-pyridinyl-21H,23H-porphinato(2-)-
 $\kappa\text{N}21, \kappa\text{N}22, \kappa\text{N}23, \kappa\text{N}24$]-, (SP-4-1)-(9CI) (CA
INDEX NAME)



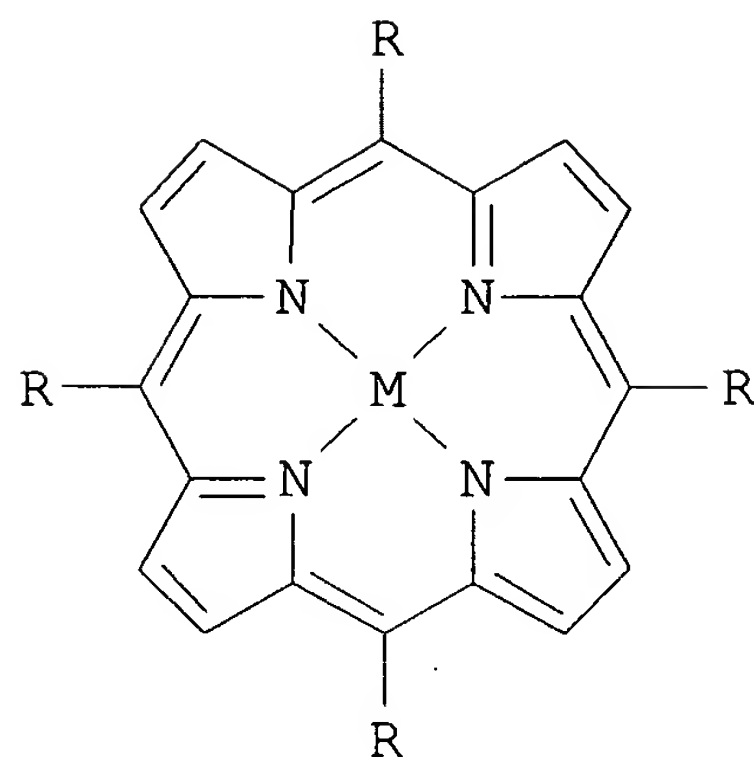
IC ICM H05B033-22
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 73
IT 14514-68-2, 5,10;15,20-Tetra(4-pyridyl)-21H,23H-porphyrin
nickel 31183-11-6, 5,10,15,20-Tetra(4-pyridyl)-21H,23H-porphyrin
zinc 211513-00-7, 5,10,15,20-Tetra(4-pyridyl)-21H,23H-
porphyrin titanium
(electron injection layer used in organic **electroluminescent**
device for flat panel display)

L22 ANSWER 21 OF 24 HCA COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 129:195624 HCA
TITLE: Organic electric-field light-emitting device and
flat panel display with it
INVENTOR(S): Ishihashi, Tadashi; Kijima, Yasunori
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

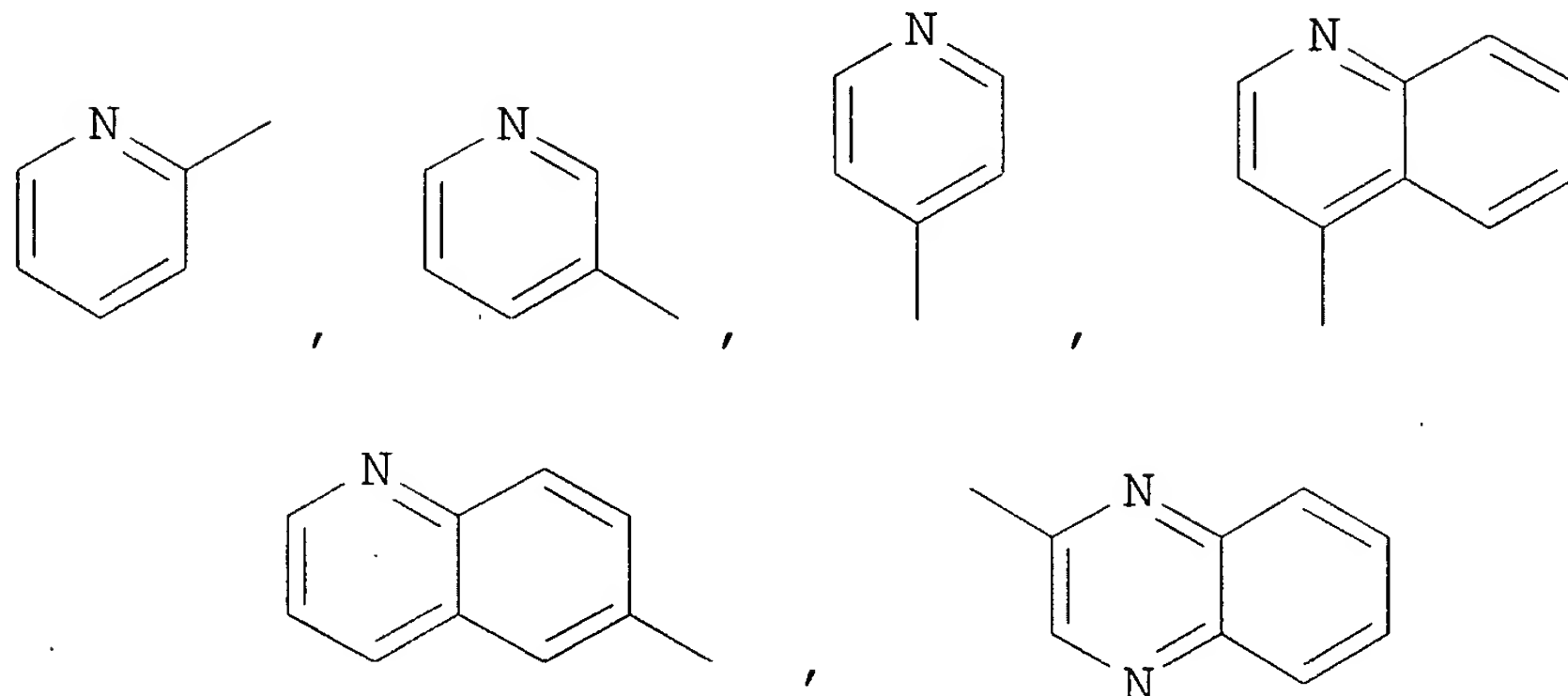
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| JP 10223372 | A2 | 19980821 | JP 1997-26951 | 199702 10 |
| | | | JP 1997-26951 | 199702 10 |

PRIORITY APPLN. INFO.:

OTHER SOURCE(S): MARPAT 129:195624
GI



Q=



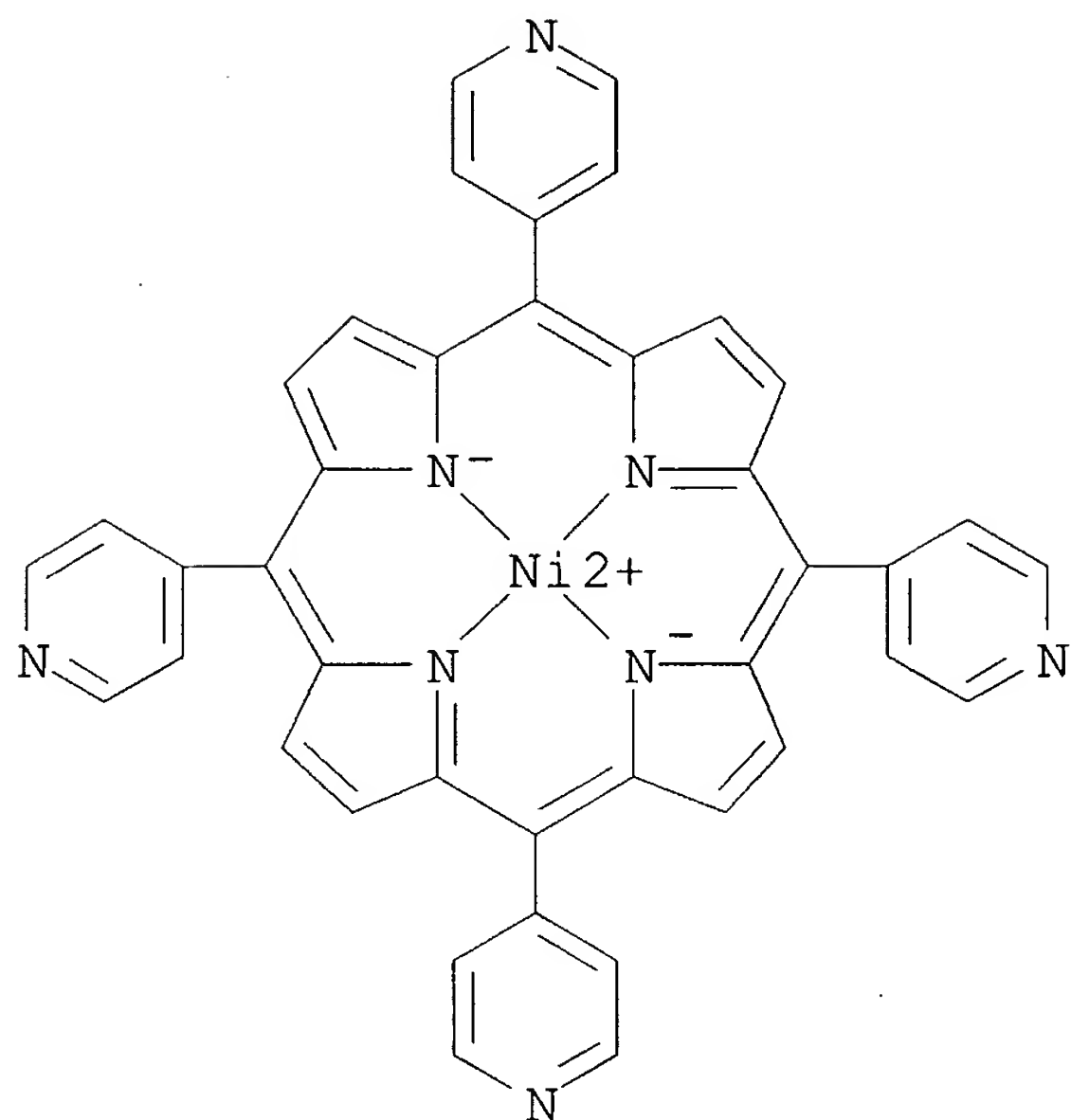
AB The device contains a cathode successively coated with an organic elec.-field light-emitting layer, an electron-transporting layer, an electron-injecting layer, and an anode. The panel contains the device. The electron-injecting layer may contain a porphyrin derivative

I (R = N-containing heterocyclic functional group selected from Q; M = metal atom). The device shows reduced elec. power consumption and long life.

IT 14514-68-2 211513-00-7
(elec.-field **light-emitting** device having porphyrin complex for flat panel display)

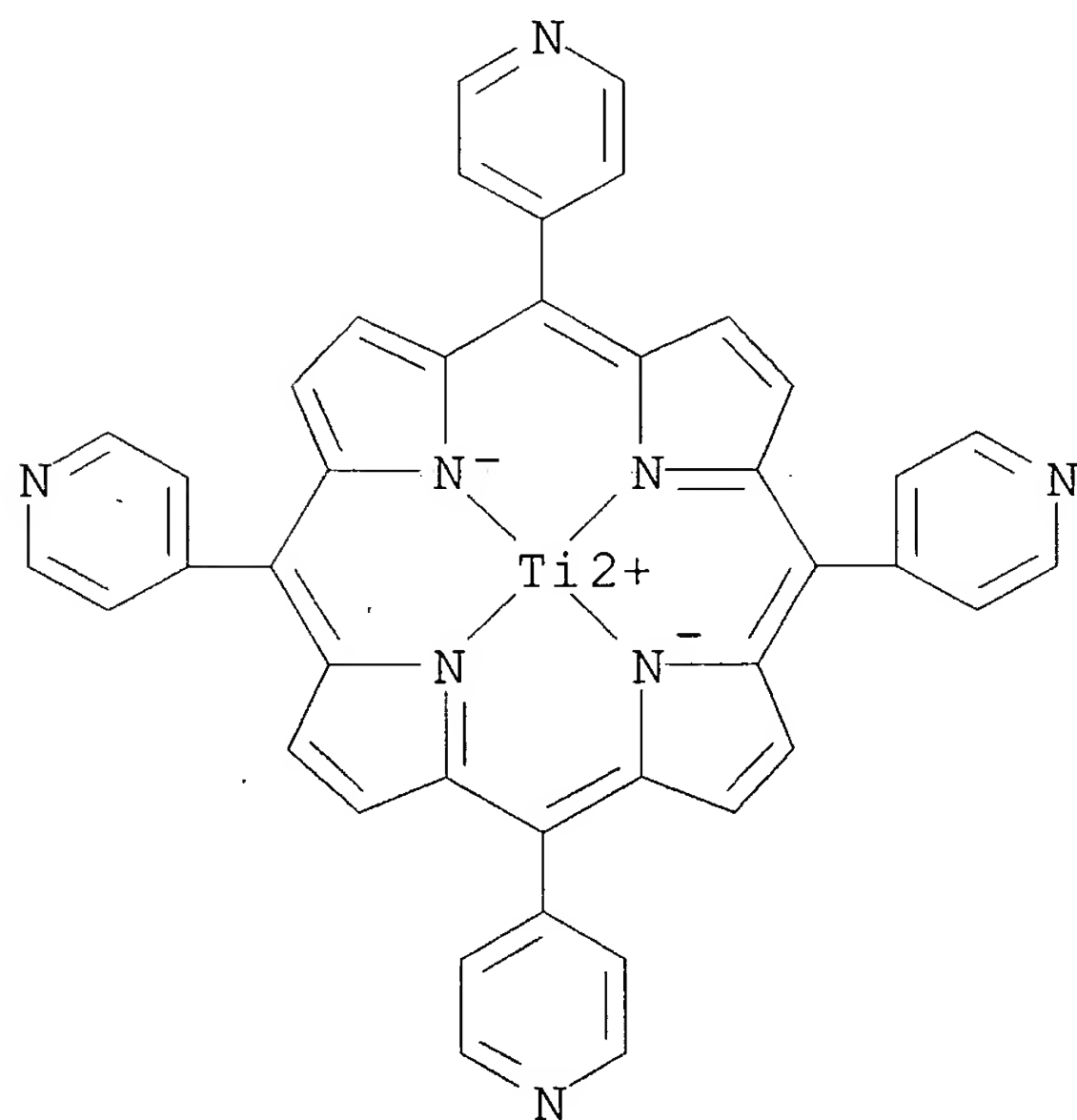
RN 14514-68-2 HCA

CN Nickel, [5,10,15,20-tetra-4-pyridinyl-21H,23H-porphinato(2-)- κ N21, κ N22, κ N23, κ N24]-, (SP-4-1)-(9CI) (CA INDEX NAME)



RN 211513-00-7 HCA

CN Titanium, [5,10,15,20-tetra-4-pyridinyl-21H,23H-porphinato(2-)-
 $\kappa\text{N}21, \kappa\text{N}22, \kappa\text{N}23, \kappa\text{N}24$]-, (SP-4-1)-(9CI) (CA
INDEX NAME)



IC ICM H05B033-22
ICS C09K011-06
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74
IT 14514-68-2 31183-11-6 211513-00-7
(elec.-field **light-emitting** device having porphyrin complex for flat panel display)

L22 ANSWER 22 OF 24 HCA COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 115:18321 HCA
TITLE: Organic thin film electroluminescent device
INVENTOR(S): Ishiko, Masayasu; Utsuki, Koji; Nunomura, Keiji
PATENT ASSIGNEE(S): NEC Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

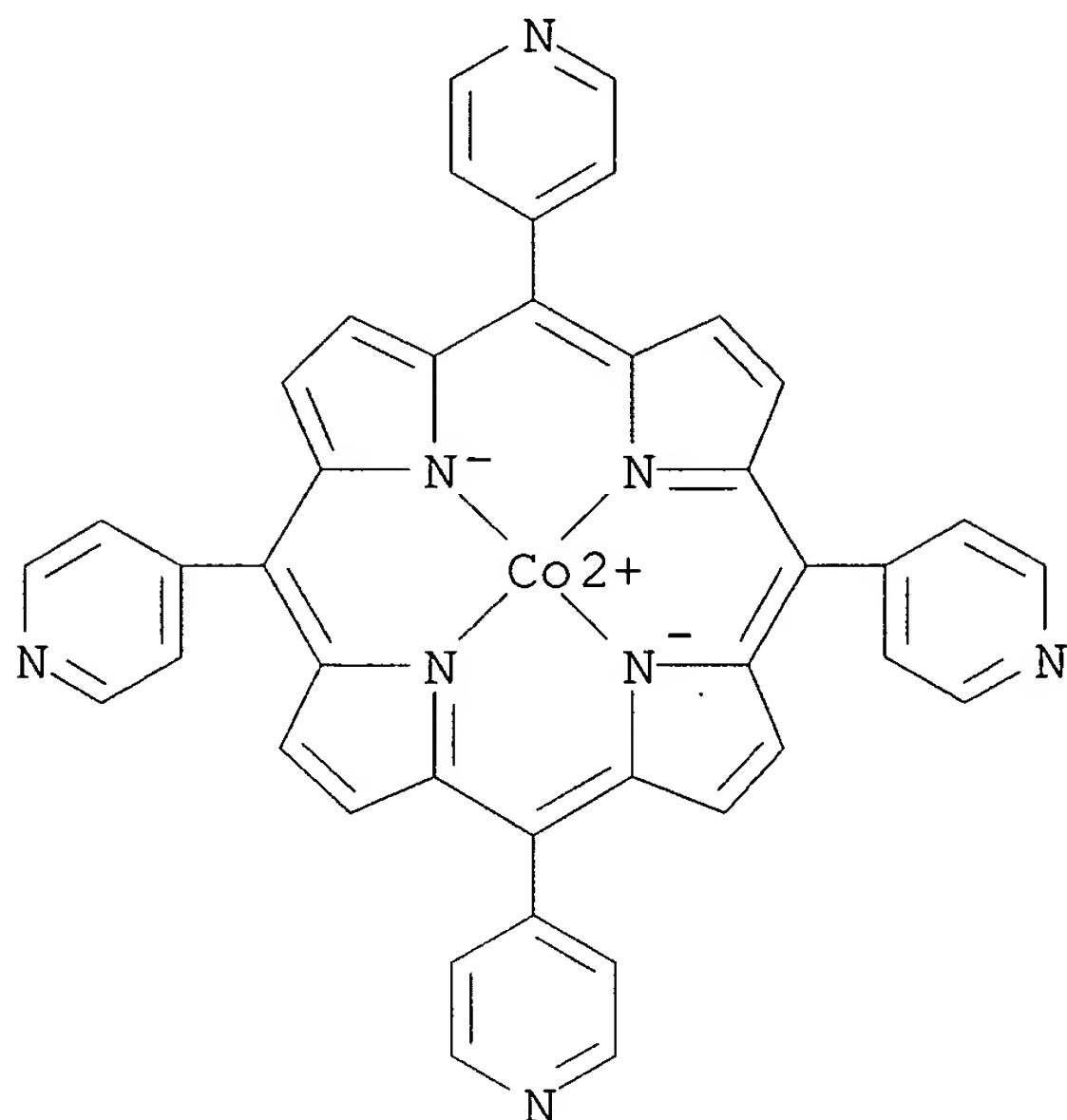
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|---------------|
| ----- | ---- | ----- | ----- | |
| JP 02213088 | A2 | 19900824 | JP 1989-34026 | 19890213 |
| PRIORITY APPLN. INFO.: | | | | JP 1989-34026 |
| | | | | 19890213 |

AB The title electroluminescent device in which an organic phosphor thin film layer is sandwiched between a pair of electrodes ≥ 1 of which is transparent is obtained by contacting 1 or both sides of the phosphor thin film layer with either a pos. hole conducting organic thin film layer containing an organic compound possessing a porphyrin- or phthalocyanine ring structure to an electron acceptor compound had been added or an electron-conducting thin-film layer containing the above organic compound to which ≥ 1 electron donor compds. had been added. The device serves as a planar light source or is used in displays.

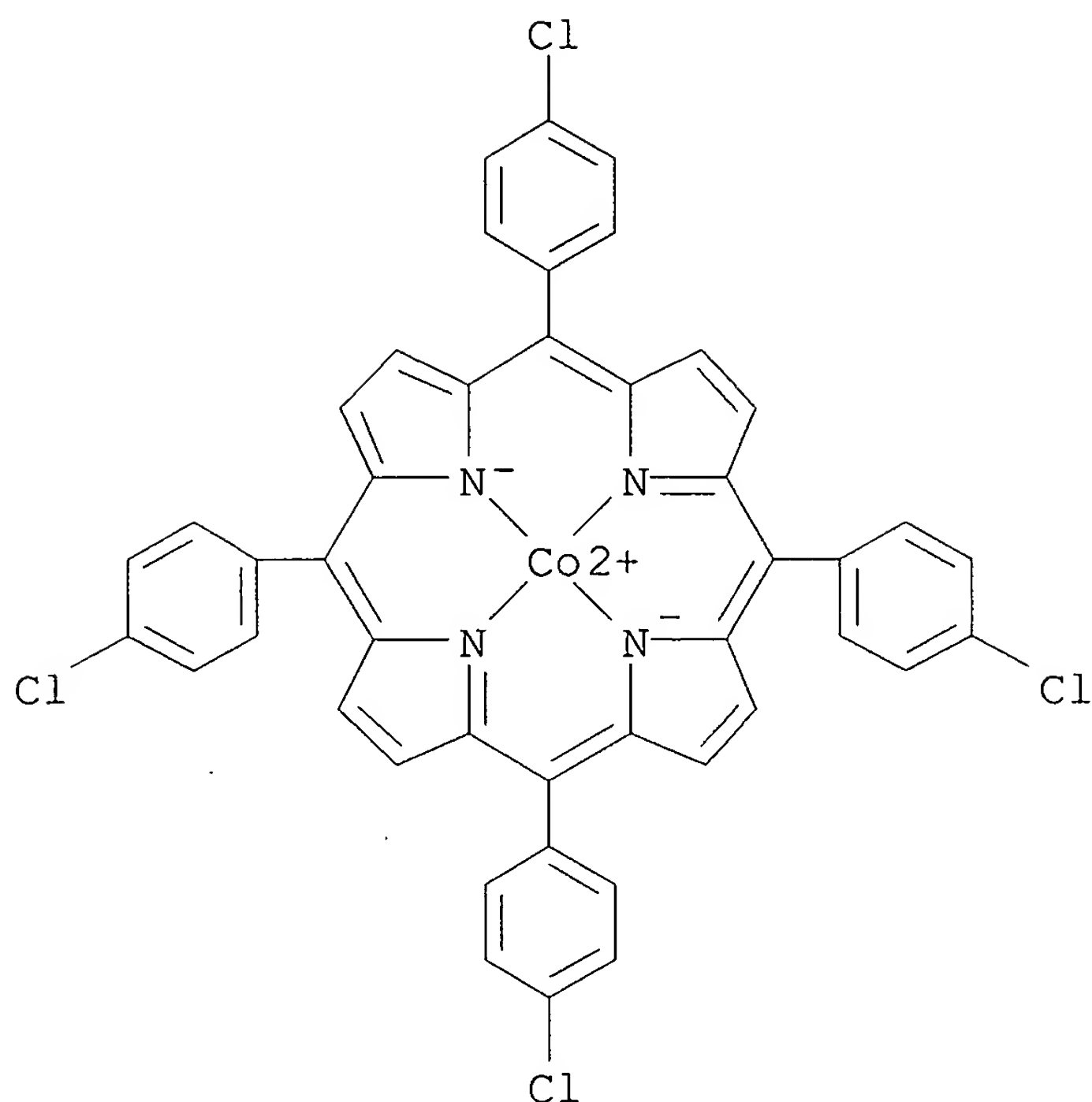
IT 14244-55-4 55915-17-8
(pos. hole injection or electron conduction layer containing, **electroluminescent** device using)

RN 14244-55-4 HCA
CN Cobalt, [5,10,15,20-tetra-4-pyridinyl-21H,23H-porphinato(2-)-

$\kappa N21, \kappa N22, \kappa N23, \kappa N24]^-$, (SP-4-1) - (9CI) (CA
INDEX NAME)



RN 55915-17-8 HCA
CN Cobalt, [5,10,15,20-tetrakis(4-chlorophenyl)-21H,23H-porphinato(2-)-
 $\kappa N21, \kappa N22, \kappa N23, \kappa N24]^-$, (SP-4-1) - (9CI) (CA
INDEX NAME)



IC ICM H05B033-14
 ICS C09K011-06; H05B033-10
 CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 74
 IT 574-93-6, 29H,31H-Phthalocyanine 1661-03-6, Magnesium phthalocyanine 3317-67-7, Cobaltphthalocyanine 14052-02-9, Zincporphyrin 14244-55-4 14320-04-8 14640-21-2 16834-13-2 21328-73-4 22112-78-3 27755-13-1 55915-17-8 120926-75-2 134373-81-2
 (pos. hole injection or electron conduction layer containing, electroluminescent device using)

L22 ANSWER 23 OF 24 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER:

108:59776 HCA

TITLE:

Characterization of fossil porphyrins of the "di-DPEP" type

AUTHOR(S):

Prowse, W. G.; Chicarelli, M. I.; Keely, B. J.; Kaur, S.; Maxwell, J. R.

CORPORATE SOURCE:

Sch. Chem., Univ. Bristol, Bristol, BS8 1TS, UK
 Geochimica et Cosmochimica Acta (1987), 51(10), 2875-7

SOURCE:

CODEN: GCACAK; ISSN: 0016-7037

DOCUMENT TYPE: Journal
 LANGUAGE: English

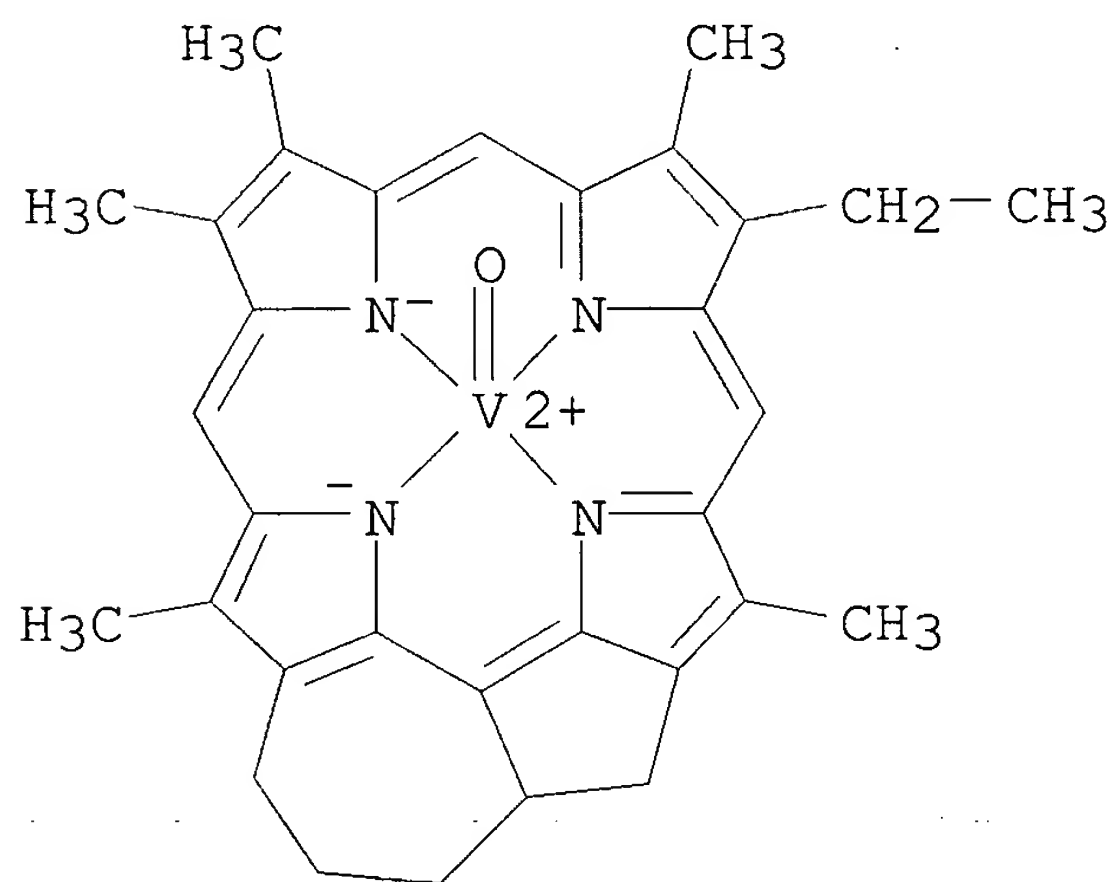
AB The structural assignment of 2 representatives (C32,C33) of the so-called di-DPEP series (with ≥ 1 degree of unsatn. than deoxyphytyloerythroetioporphyrin) is reported which were isolated from El Lajjun shale, a bituminous limestone of central Jordan (Upper Cretaceous, El Lajjun Basin). NMR results show that the free base of these vanadyl porphyrins is 13,15-ethano-3,8-diethyl-2,7,12,18-tetramethyl-132, 17-propanoporphyrin. These di-DPEP components do not contain a 6-membered ring. The nature of the fused ring structural feature suggests, whatever the biol. origin of the 2 di-DPEP's, the possibility of the fused ring system being present in the precursor pigment(s) at the time of sediment deposition.

IT 112172-06-2 112591-94-3

(in bituminous limestone, of El Lajjun Basin, Jordan)

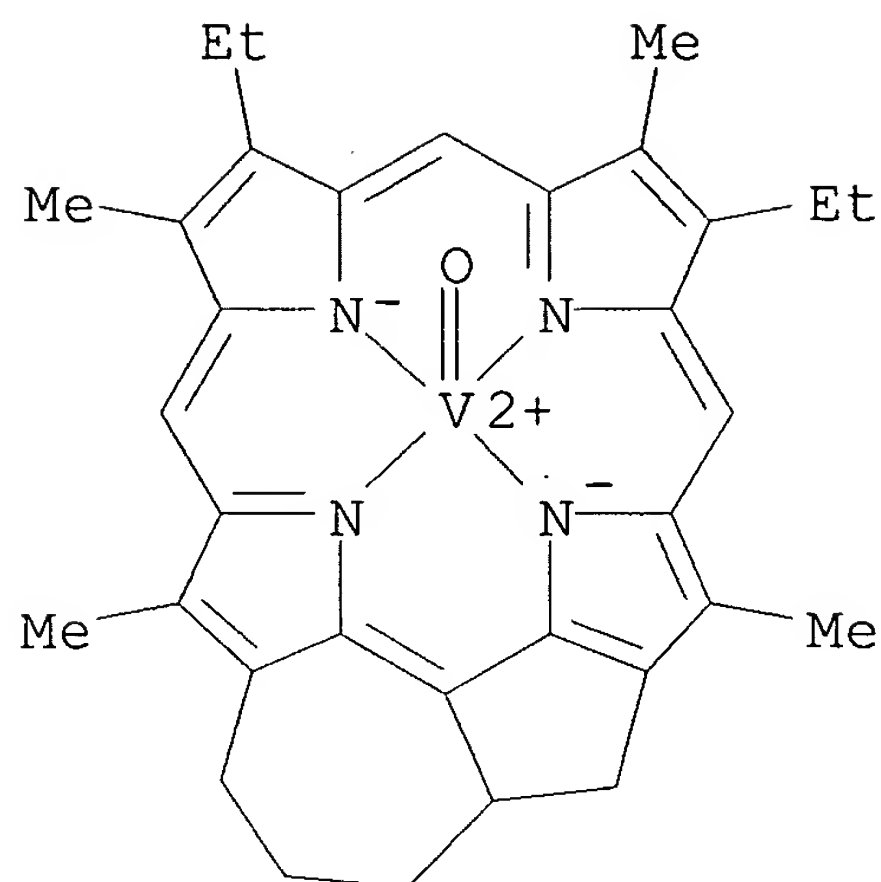
RN 112172-06-2 HCA

CN Vanadium, [11-ethyl-17a,18,19,20-tetrahydro-5,6,10,22,23-pentamethyl-17H-4,7-imino-2,21:14,16-dimetheno-9,12-nitrilo-1H-azuleno[1,8-bc][1,5]diazacyclooctadecinato(2-)-N1,N15,N24,N25]oxo-, . (SP-5-15) - (9CI) (CA INDEX NAME)



RN 112591-94-3 HCA

CN Vanadium, [6,11-diethyl-17a,18,19,20-tetrahydro-5,10,22,23-tetramethyl-17H-4,7-imino-2,21:14,16-dimetheno-9,12-nitrilo-1H-azuleno[1,8-bc][1,5]diazacyclooctadecinato(2-)-N1,N15,N24,N25]oxo-, (SP-5-15) - (9CI) (CA INDEX NAME)



CC 53-5 (Mineralogical and Geological Chemistry)

IT 112172-06-2 112591-94-3

(in bituminous limestone, of El Lajjun Basin, Jordan)

L22 ANSWER 24 OF 24 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 77:157894 HCA

TITLE: Solid-state light source with an optical filter
containing metal derivatives of
tetraphenylporphin

INVENTOR(S): Wachter, Paul

PATENT ASSIGNEE(S): General Telephone and Electronics Laboratories,
Inc.

SOURCE: U.S., 5 pp.
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|-------------------|
| US 3696263 | A | 19721003 | US 1970-40940 | 197005 25 |
| PRIORITY APPLN. INFO.: | | | US 1970-40940 | A 197005 25 |

AB A solid-state light source adapted for viewing in an environment of
ambient light consists of a red-emitting GaAs_{1-x}P_x diode and an

acrylic ester polymeric matrix containing PtL, SnLCl₂, and MnLCl
(H₂L = 5, 10, 15, 20-tetraphenylporphine). When a green-emitting GaP diode is the light source, the polymeric matrix contains PtL, MnLCl, and NiL.

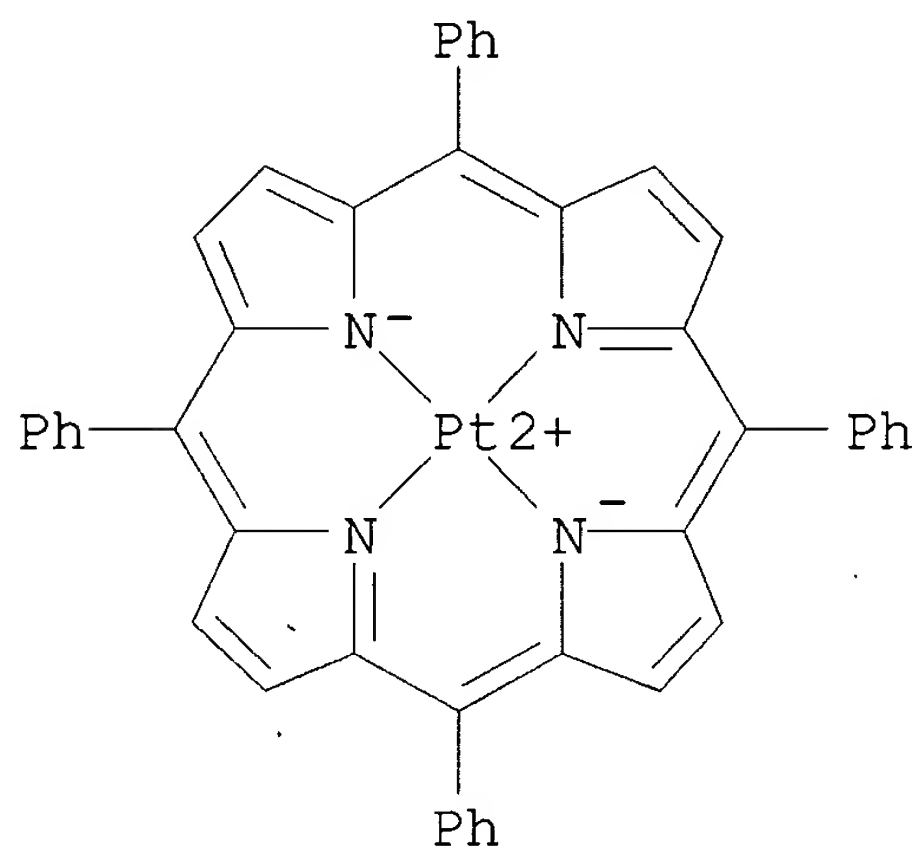
IT 14187-14-5 32195-55-4

(optical filters from acrylic polymer matrix containing, for gallium

arsenide phosphide **electroluminescent** diodes)

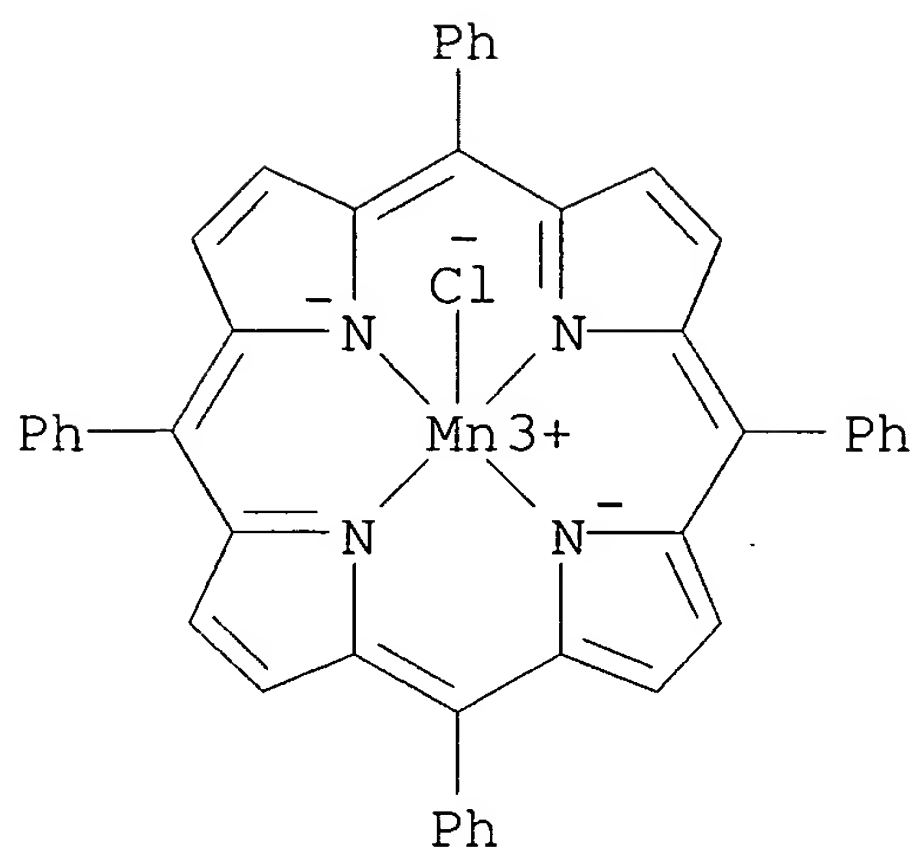
RN 14187-14-5 HCA

CN Platinum, [5,10,15,20-tetraphenyl-21H,23H-porphinato(2-)-
κN21,κN22,κN23,κN24]-, (SP-4-1)- (9CI) (CA
INDEX NAME)



RN 32195-55-4 HCA

CN Manganese, chloro[5,10,15,20-tetraphenyl-21H,23H-porphinato(2-)-
κN21,κN22,κN23,κN24]-, (SP-5-12)- (9CI) (CA
INDEX NAME)



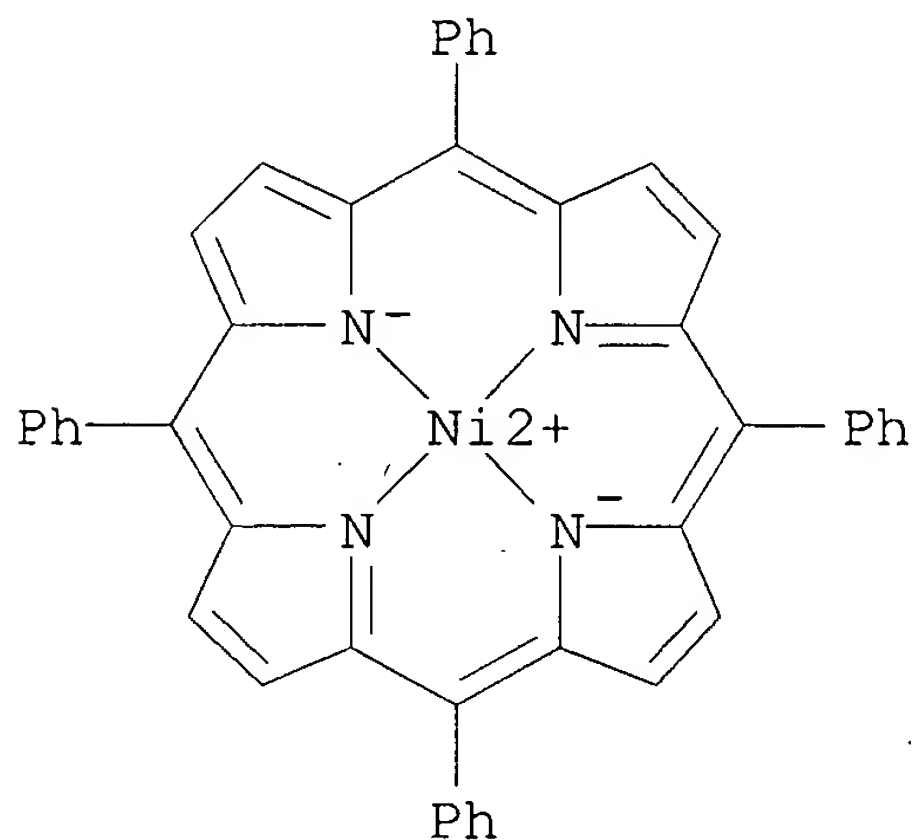
IT 14172-92-0

(optical filters from acrylic polymer matrix containing, for gallium

phosphide **electroluminescent** diodes)

RN 14172-92-0 HCA

CN Nickel, [5,10,15,20-tetraphenyl-21H,23H-porphinato(2-)-
κN21,κN22,κN23,κN24]-, (SP-4-1)-(9CI) (CA
INDEX NAME)



IC H01J

NCL 313108000D

CC 71-7 (Electric Phenomena)

Section cross-reference(s): 73

IT Light

(filters, from acrylic polymer matrix containing metal

tetraphenylporphine complexes, for gallium arsenide phosphide
electroluminescent diodes)

IT **Electroluminescent** devices
(gallium arsenide phosphide, optical filters for, from acrylic
polymer matrix containing metal tetraphenylporphine complexes)

IT Acrylic polymers
(optical filters from matrix of, containing metal
tetraphenylporphine
complexes, for gallium arsenide phosphide
electroluminescent diodes)

IT 1303-00-0D, Gallium arsenide (GaAs), solid solutions with gallium
phosphide 12063-98-8, uses and miscellaneous 12063-98-8D,
Gallium phosphide (GaP), solid solutions with gallium arsenide
(**electroluminescent** diodes, optical filters for, from
acrylic polymer matrix containing metal tetraphenylporphine
complexes)

IT 14187-14-5 26334-85-0 32195-55-4
(optical filters from acrylic polymer matrix containing, for
gallium
arsenide phosphide **electroluminescent** diodes)

IT 14172-92-0
(optical filters from acrylic polymer matrix containing, for
gallium
phosphide **electroluminescent** diodes)

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